

CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The BLM developed this draft RMPA/EIS to provide direction for managing approximately 15,257,026 acres of BLM-administered land (decision area) in the Oregon sub-region of the Great Basin region (**Figure 1-1**, BLM and Forest Service GRSG Planning Strategy Sub-Region/EIS Boundaries, in **Chapter 1**, Introduction). Its purpose is to incorporate explicit objectives and conservation measures for Greater-Sage Grouse (also referred to as sage-grouse or GRSG) and its habitat. The RMPA/EIS follows guidance provided by the NEPA, which directs the BLM to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources...” (NEPA Section 102[2][e]). At the heart of the alternative-development process is the required development of a reasonable range of alternatives. Public and internal BLM scoping has identified issues that present opportunities for alternative courses of action, while the purpose of and need for action provides a framework for determining “reasonableness,” as described in **Chapter 1**, Introduction.

The No Action Alternative (Alternative A) represents the continuation of current management direction and proposes no new plan or management actions. This alternative is required by CEQ regulations and provides a baseline for comparing the other alternatives (CEQ 1981). The action alternatives (Alternatives B, C, D, E, and F) were developed by considering issues and concerns raised during the scoping period. They also were developed by considering planning criteria and guidance applicable to resource management and uses that are relevant to managing GRSG habitat. The five action alternatives describe proposed changes to current management, as well as any existing management that would be carried forward. These alternatives provide a range of choices for resolving the planning issues identified in **Chapter 1**, Introduction.

The BLM recognizes that social, economic, and environmental issues cross land ownership lines and that extensive cooperation is needed to address issues of mutual concern. To the extent possible, these alternatives were developed using input from comments submitted by the public and cooperating agencies during the scoping phase. The alternatives are focused on responding to issues and threats to GRSG and their habitat identified by USFWS, creating management consistency for GRSG and their habitat across the range of the species in the Oregon sub-region, and ultimately providing sound management direction and the regulatory mechanisms needed to demonstrate that GRSG does not need to be listed under the ESA. The causes of population decline are increased anthropogenic (human-caused) and wildfire habitat disturbance, juniper encroachment, insect outbreaks, and invasive species, which result in habitat loss and fragmentation.

2.1.1 Oregon Sub-Region

The Prineville, Burns, Lakeview, and Vale BLM District Offices administer the eight RMPs being amended by this RMPA/EIS. The Prineville District contains BLM-administered lands scattered throughout central Oregon, south from The Dalles to the high desert, west to Sisters, and east to the Grant/Harney County line. The Burns District is in Harney and small sections of Malheur, Grant, and Lake Counties in southeastern Oregon, extending from the Oregon-Nevada border on the south into the Blue Mountains on the north, a distance of nearly 200 miles. The Lakeview District is in Lake, Klamath, and part of Harney Counties in south-central and southeastern Oregon. The lands vary from the mixed conifer forests on the east slope of the Cascade Mountains to the high desert country. The Vale District borders Idaho from Nevada to Washington, and includes small sections of Washington. The district also manages parts of grazing allotments in Nevada.

The entire planning area includes various land management entities. The management directions and actions outlined in this RMPA/EIS will apply only to BLM-administered lands in the planning area and to BLM-administered federal mineral estate that may lie beneath other surface ownership; this is often referred to as split-estate lands. These two areas are collectively referred to as the decision area. There are 12,618,026 acres of BLM-administered surface lands in the planning area. There are 2,639,000 acres of BLM-administered mineral split-estate beneath private surface lands that are also in the planning area. When combined together, these two areas total 15,257,026 acres (the decision area). The decisions analyzed in the RMPAs are limited to making land use planning decisions specific to the conservation of GRSG and their habitat in the decision area.

2.2 INTRODUCTION TO ALTERNATIVES

2.2.1 Purpose of Alternatives Development

Alternatives development is the heart of the planning process. Land use planning and NEPA regulations require the BLM to formulate a reasonable range of alternatives. Alternatives development is guided by established planning criteria (as outlined in 43 CFR Part 1610).

The basic goal of alternatives development is to produce distinct potential management scenarios that:

- Address the identified major planning issues
- Explore opportunities to enhance management of resources and resource uses
- Resolve conflicts among resources and resource uses
- Meet the purpose of and need for the RMPA
- Are feasible

Pursuit of this goal provides the BLM and the public with an appreciation for the diverse ways in which conflicts over resources and resource uses might be resolved. It also offers the BLM State Director a reasonable range of alternatives from which to make an informed decision. The components and broad aim of each alternative are discussed below.

2.2.2 Components of Alternatives

RMP decisions consist of identifying and clearly defining goals and objectives (desired outcomes) for resources and resource uses, followed by developing allowable uses and management actions necessary for achieving the goals and objectives. These critical determinations guide future land management actions and subsequent site-specific implementation actions to meet multiple use and sustained yield mandates, while maintaining land health.

Goals are broad statements of desired outcomes (RMP-wide and resource- or resource use-specific) and are not quantifiable or measurable. Objectives are specific measurable desired conditions or outcomes intended to meet goals. While the goal for this RMPA is the same across all alternatives, objectives typically vary, resulting in different allowable uses and management actions for some resources and resource uses.

Allowable uses and management actions are designed to achieve objectives. Allowable uses delineate which uses are permitted, restricted, or prohibited and may include stipulations or restrictions. Allowable uses also identify lands where specific uses are excluded to protect resource values, or where certain lands are open or closed in response to legislative, regulatory, or policy requirements. Management actions are measures that guide day-to-day and future activities.

Implementation decisions are site-specific on-the-ground actions and are not addressed in this RMP amendment.

2.3 ALTERNATIVES DEVELOPMENT PROCESS

The Oregon BLM planning team employed the planning process outlined in **Chapter I**, Introduction, to develop a reasonable range of alternatives for the RMPA. The BLM complied with NEPA and the CEQ implementing regulations at 40 CFR, Part 1500, in developing alternatives for this RMPA/EIS. This included seeking public input and analyzing reasonable alternatives.

Issue identification and current management assessment processes began in 2011 with an extensive review by the BLM's interdisciplinary team of current land management decisions and direction from RMPs being amended by this RMPA/EIS. From this, the BLM identified preliminary planning issues that could be addressed in an RMPA.

Planning issues are concerns or controversies about existing and potential land and resource allowable uses, levels of resource use, production, and related management practices. Planning issues are well defined or topically discrete and should be addressed in the management decisions identified in the alternatives. As this definition suggests, the alternatives identify different ways to resolve each planning issue. The results of public scoping are detailed in the National GRSG Planning Strategy Land Use Plan Amendments and Environmental Impact Statements Scoping Summary Report (BLM and Forest Service 2012).

Preliminary planning issues were distributed during the scoping process for public comment, along with a request for identifying additional issues. Public input received during the scoping process was considered to ensure that all appropriate issues and concerns would be addressed in developing the alternatives. Based on scoping and public participation, the BLM identified the planning issues described in **Chapter I**, Introduction, to be addressed in the RMPA. The planning team based these on broad concerns or controversies related to conditions, trends, needs, and existing and potential uses of planning area lands and resources.

2.3.1 Develop a Reasonable Range of Alternatives

Between February 2012 and March 2013, the planning team met to develop management goals and to identify objectives and actions to address the goals. Through this process, the planning team developed one No Action Alternative and five action alternatives.

The basic goal of developing action alternatives is to prepare different possible management scenarios that:

- Fulfill the purpose of and need for the RMPA (**Section 1.2**, Purpose and Need)

- Address the planning issues (**Section 1.5.2**, Issues Identified for Consideration in the Oregon Sub-Region Greater Sage-Grouse RMP Amendments)
- Meet the multiple use mandates of the FLPMA (43 USC Section 1716)

Achieving this goal will help the BLM and the public understand the various ways of addressing conflicts concerning alternative uses of available resources. It also will provide BLM decision makers with a reasonable range of alternatives with which to make an informed decision.

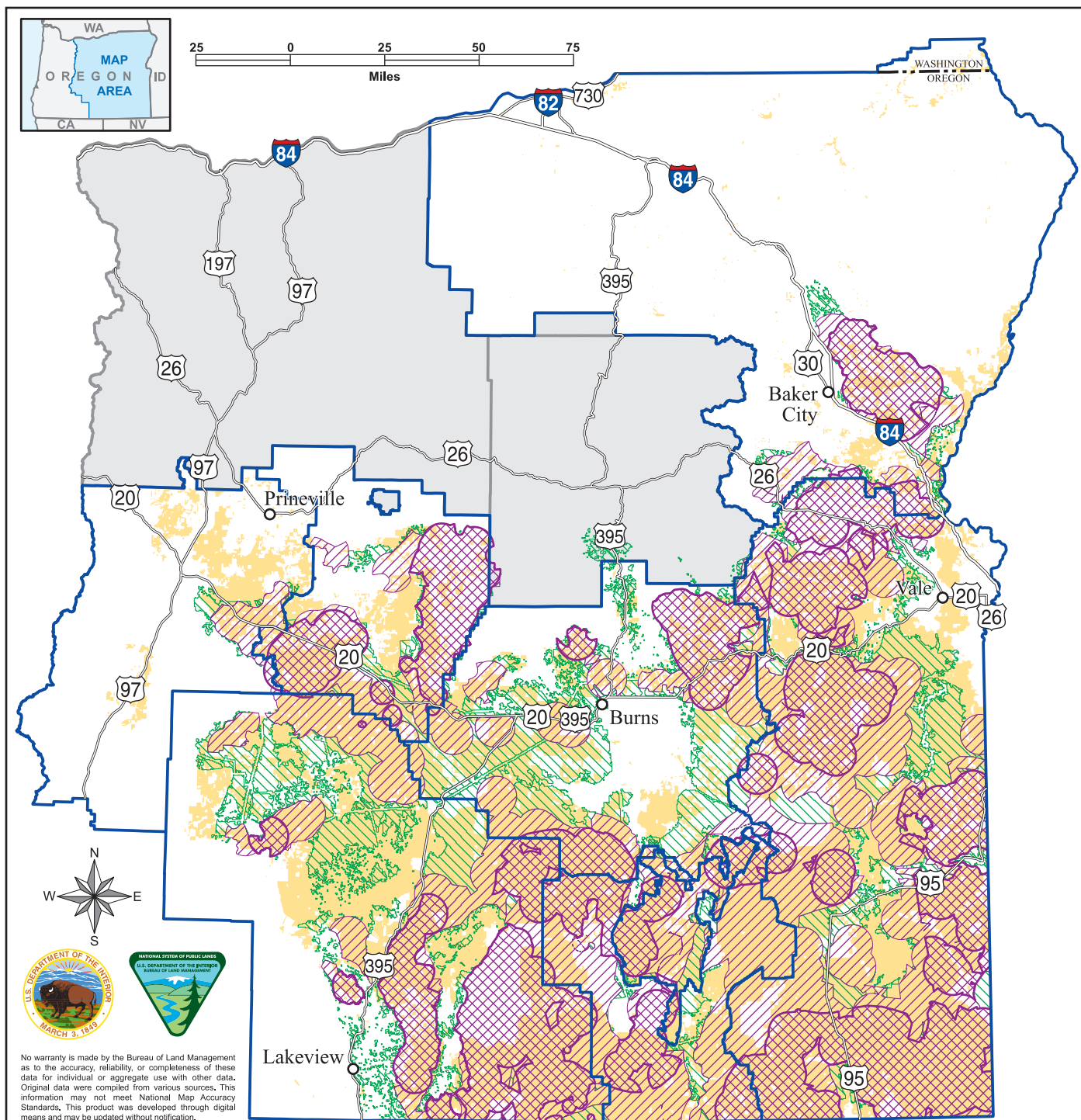
2.4 RESULTING RANGE OF ALTERNATIVES

CEQ regulations require analyzing the No Action Alternative (40 CFR Part 1502.14[d]) even if it does not meet the purpose of and need for the proposed action. “No action” means that current management practices, based on existing RMPs and other management decision documents, would continue. Alternative A is the No Action Alternative. It provides a useful baseline for comparing environmental effects (including cumulative effects) and demonstrates the consequences of not meeting the need for the action.

In addition to the No Action Alternative, five action alternatives (Alternatives B, C, D, E, and F) were developed. These alternatives are the result of extensive consultation and coordination with the public, tribes, cooperating agencies, and stakeholders (**Chapter 5**, Consultation and Coordination). All of the action alternatives were developed to meet the purpose of and need for the proposed action and to address the planning issues and concerns identified through public scoping. They are intended to maintain or increase GRSG abundance and distribution in the decision area.

Each alternative contains a discrete set of objectives and management actions and constitutes a separate RMPA with the potential for different long-range outcomes and conditions. The goal is met in varying degrees, with the potential for different long-range outcomes and conditions. Depending on the alternative’s objective, conservation measures focus on preliminary priority management areas (PPMAs) for Alternatives B, C, D, and F and on Core Area habitat for Alternative E. They also focus on preliminary general management areas (PGMAs) for Alternatives B, C, D, and F and on Low Density habitat for Alternative E. PPMAs, PPH, and Core Area habitat cover the same areas. PGMAs and PGH cover the same areas and are made up of both Low Density habitat and occupied habitat (**Figure 2-1**, Greater Sage-Grouse Habitat in the Planning Area).

The relative emphasis given to particular resources and resource uses differs as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses



Legend

- BLM Office
- GRSG RMP Boundary
- Non-GRSG RMP Area
- BLM Administered Land

Preliminary Priority Habitat (PPH)



Core Habitat

Preliminary General Habitat (PGH)



Low Density



Currently Occupied Habitat

Figure 2-1: Greater Sage-Grouse Habitat in the Planning Area

are mandated by law or are not tied to planning issues, there are typically few or no distinctions between alternatives.

The GRSG habitat classifications are based on the existing resources (GRSG presence and sagebrush). The range of alternatives involves different management direction for GRSG habitat. Alternatives do not change the amount of GRSG habitat that is managed by each alternative.

The alternatives are directed toward responding to USFWS-identified threats to GRSG and their habitat. All of the action alternatives were developed to employ BLM resource programs to address USFWS-identified threats. **Table 2-1**, Threats to Greater Sage-Grouse and Their Habitat and Applicable BLM RMP Programs for Addressing Threats, identifies the threats and the applicable BLM-resource programs in RMPs for addressing the threats.

Table 2-1
Threats to Greater Sage-Grouse and Their Habitat and Applicable BLM RMP Programs for Addressing Threats

USFWS-Identified Threats to GRSG and Their Habitat	USFWS COT Report-Identified Threats to GRSG and Their Habitat	Applicable BLM RMP Resource Program for Addressing the Threat	Decisions Made Under the BLM RMP Resource Programs
Wildland fire	Fire	Wildland fire management	Establish fire management strategies; identify areas suitable and unsuitable for wildland fire use and priority areas for suppression; fuels treatment
Invasive species	Nonnative, invasive plants species	Vegetation management	Implement weed control, suppression, or eradication; allowable use restrictions; or active management or treatment
		Livestock grazing/range management	Allowable use restrictions
		Wildland fire management	Active management or treatment to livestock grazing/range management
		Recreation management	Restrictions and best management practices associated with special recreation use permits

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USFWS-Identified Threats to GRSG and Their Habitat	USFWS COT Report-Identified Threats to GRSG and Their Habitat	Applicable BLM RMP Resource Program for Addressing the Threat	Decisions Made Under the BLM RMP Resource Programs
Wind energy development	Energy development	Lands and realty management	Issue ROW grants; identify ROW avoidance or exclusion areas; identify utility corridors
For oil and gas, see Infrastructure – power lines/pipelines, roads (below)		Leasable minerals management	Identify open and closed (no lease) areas to fluid mineral leasing; identify open areas with no surface occupancy, controlled surface use, and timing limitation stipulations
Prescribed fire	Sagebrush removal	Vegetation management	Conduct vegetation treatments
		Wildland fire management	Establish fire management strategies; identify areas suitable and unsuitable for prescribed fire use
Livestock Grazing Management	Grazing	Livestock grazing/range management	Identify acres available and not available to grazing; establish animal unit months; manage grazing systems and permit renewal; improve ranges; identify season of use and stocking rates
		Vegetation management	Conduct vegetation treatments
Wild Horse and Burro Management	Grazing	Wild horses and burros management	Identify herd areas, herd management areas, and appropriate management levels
See Grazing Management (above)	Range management structures	Livestock grazing/range management	See Grazing, above
No similar threat identified	Free-roaming equid management	Wild horses and burros management	Identify herd management areas and appropriate management levels

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Conifer encroachment	Pinyon-juniper expansion	Livestock grazing/range management (for COT listing)	See Grazing , above
		Wildland fire management	Active management or treatment
		Vegetation management (for USFWS listing)	Conduct vegetation treatments
Agriculture and urbanization	Agricultural conversion and exurban development	Lands and realty management	Identify land for acquisition, retention, and disposal; issue permits and leases for agricultural activities
Hard rock mining	Mining	Locatable minerals management	Recommend to withdraw lands from locatable mineral development; establish terms, conditions, or special considerations
		Mineral materials (salables) management	Identify open and closed areas to mineral materials disposal; establish terms, conditions, or special considerations
		Nonenergy leasable minerals management	Identify open and closed areas to nonenergy leasable minerals; establish terms, conditions, or special considerations
		Mineral split-estate management (for COT listing)	Apply stipulations, conditions, or restrictions, and recommend withdrawals.
Infrastructure, Roads (see below)	Recreation	Recreation management	Infrastructure, Roads (see below)

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Infrastructure - Power lines/pipelines - Roads - Communication sites - Railroads - Fences	Infrastructure	Lands and realty management	Issue ROW grant; identify ROW avoidance or exclusion areas; identify utility corridors
		Travel management	Identify motorized and nonmotorized area designations, including areas open, limited, or closed to off-highway vehicles (OHVs)
	Fences	Livestock grazing/range management (for USFWS listing)	Authorize the installation or removal of fences; identify fence installation or removal requirements. Decisions may be made regarding modification of fences that would not be done by ranchers
Water developments	No similar threat identified	Wild horses and burros	Identify number, location, and type of range water developments
		Livestock grazing	Authorize water developments; identify water development requirements. Decisions may be made regarding water development that would not be done by ranchers.
Climate change	No similar threat identified	Areas of Critical Environmental Concern	Identification of areas of critical environmental concern
Weather	No similar threat identified	There is no resource program in the BLM RMPs for addressing this USFWS-identified threat.	Not applicable

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Predation	No similar threat identified	All applicable programs	Establish design features and best management practices to reduce avian predator perching and nesting on structures, and enhance hiding cover at nest sites
Disease	No similar threat identified	All applicable programs	Establish design features and best management practices to reduce risk for West Nile virus
Hunting	No similar threat identified	There is no resource program in the BLM RMPs for addressing this USFWS-identified threat.	Not applicable
Contaminants	No similar threat identified	Mineral resources	Plan of operation requirements
		Public health and safety	Remediate and resolve illegal dumping

Note: The threat of exurban development (dispersed homes on small acreages) includes multiple USFWS threats. Exurban development results in direct habitat loss and habitat fragmentation and the introduction of invasive plant species. Urban and exurban activities also increase the presence of predator subsidies (e.g., trash, landfills, and bird feeders). This allows predators associated with humans (e.g., red fox, skunks, and raccoons) to increase in numbers, which could have disproportionate impacts on GRSG. Additionally, pets may have negative impacts on GRSG through direct predation or disturbance, such as chasing birds. Infrastructure associated with exurban development, such as power lines and roads, also results in habitat loss and fragmentation, subsidies for avian predators, such as ravens, and possible disturbance to GRSG. Moreover, hobby livestock concentrated on small acreages can result in habitat loss and the introduction of invasive annual grasses and weeds (USFWS 2013a).

The threats to GRSG and their habitat outlined in **Table 2-1** derive from Factor A of USFWS's three 12-month findings on petitions. These petitions were submitted to list three entities of the GRSG as threatened or endangered under the ESA and to consider COT Report (USFWS 2013a).

The order of threats on this list is not an exact ranking but a grouping of threats by general importance in the western region, based on the COT Report. In Oregon, the highest threats are invasive species (annual grasses and other noxious weeds), wildfire, and conifer encroachment, all of which may be influenced by climate change. Other important threats are mining, grazing,

agriculture/urbanization, infrastructure development, and renewable energy sources. The remaining threats are significant locally or minimal in Oregon. The threats are not necessarily independent and often interact; for example, wildfire could increase the number of invasive plants. Grazing may be a threat to GRSG, especially when it is conducted improperly. Improper grazing is when the degree of utilization of current year's growth will cause BLM-administered land to fail to achieve management objectives and maintain or improve the long-term productivity of the site.

There are no resource programs in BLM RMPs for addressing GRSG threats from weather and hunting; therefore, these threats are not addressed in this RMPA/EIS.

2.5 DESCRIPTION OF ALTERNATIVES

Appendix A, Chapter 2 Figures, contains maps that identify where actions for the alternatives would be applicable; they show the differences between all alternatives. In some instances, varying levels of management overlap a single area due to management prescriptions from different resource programs. Summaries of the alternatives are provided below, and a detailed comparison is provided in the tables in **Section 2.9**, Comparison of Alternatives.

2.5.1 Management Common to All Alternatives

Allowable uses and management actions from the existing RMPs that remain valid and do not require revision have been carried forward to all of the proposed alternatives. Although each alternative emphasizes a slightly different mix of resources and resource uses, all of the alternatives contain the following common elements:

- Compliance with state and federal laws, regulations, policies, and standards, including FLPMA multiple use mandates
- Implementation of actions originating from laws, regulations, and policies and conformance to day-to-day management, monitoring, and administrative functions not specifically addressed
- Preservation of valid existing rights, which include any leases, claims, or other use authorizations established before a new or modified authorization, change in land designation, or new or modified regulation is approved; existing fluid mineral leases are managed through conditions of approval
- Collaboration through partnerships and communication with adjacent landowners, federal and state agencies, tribes, communities, and other agencies, individuals, and organizations, as needed, to monitor and implement decisions to achieve desired resource conditions. This would include outreach and education, monitoring, and project-specific activities.
- Protection of people and property from wildfire

At the request of permittees with allotments containing priority habitat on BLM-administered lands, candidate conservation agreements or their successors will be implemented. The purposes of these voluntary agreements are to remove or reduce threats to GRS on BLM-administered lands and to assist in integrating private lands in the overall management strategy.

Decisions made by this RMPA/EIS are anticipated to be subsequently implemented. Restrictions on resource uses (e.g., areas closed to leasing) made through this amendment apply for the life of the RMPs. Actions taken or authorized by the BLM during RMP implementation would comply with standard practices. Therefore, these practices are considered part of each alternative.

2.5.2 Management Common to the Action Alternatives

Required Design Features and Best Management Practices

Required design features (RDFs) are means, measures, or practices intended to reduce or avoid adverse environmental impacts. This RMPA/EIS proposes a suite of design features that would establish the minimum specifications for certain activities, such as water and mineral developments and fire and fuels management, to mitigate adverse impacts. These design features would be required to provide a greater level of regulatory certainty than through implementing best management practices (BMPs).

RDFs are a suite of features that would establish the minimum specifications for certain activities (e.g., water developments, fluid mineral development, and fire and fuels management) to help mitigate adverse impacts. In general, the design features are accepted practices that are known to be effective when implemented properly at the project level. However, their applicability and overall effectiveness cannot be fully assessed until the project location and design are known. Because of site-specific circumstances, some features may not apply to some projects (e.g., a resource is not present on a given site) or may require slight variations (e.g., a larger or smaller protective area). All variations in design features would require appropriate analysis and disclosure as part of future project authorizations. Additional mitigation measures may be identified and required during individual project development and environmental review, and it is not possible to list all mitigation measures at the planning level.

RDFs are listed in **Appendix C**, Required Design Features for Alternatives B, C, D, and F. The RDFs were derived from BMPs listed in Appendices D and F of the NTT report (NTT 2011). All of the action alternatives, except Alternative E, have the same RDFs.

The BLM continues to improve the way it manages development on the land it administers. Part of that improvement includes the use of BMPs to lessen the effects of development on the environment. BMPs are listed in **Appendix D**, Best Management Practices for Alternatives B, C, D, and F. The BMPs were

derived from BMPs listed in Appendix E of the NTT report (NTT 2011). All of the action alternatives, except Alternative E, have the same BMPs.

Regional Mitigation Strategy

For those impacts that cannot be sufficiently avoided or minimized onsite, the BLM must ensure implementation of effective measures to offset (or compensate for) such impacts and to maintain or improve the viability of GRSG habitat and populations over time, as described in the COT Report. Regional mitigation may be a necessary (**Appendix E**, Regional Mitigation Strategy). This applies to all of the action alternatives, except Alternative E.

Habitat Disturbance Cap (Threshold)

GRSG have low tolerance, especially during the breeding season, for human disturbances such as roads, oil and gas development, and exurban development (Leu and Hanser 2011). Knick et al. (2013) reported 99 percent of leks (3,184) known to be active between 1998 and 2007 were in landscapes with less than 3 percent development. All lands surrounding leks were less than 14 percent developed. The National Technical Team (NTT 2011) recommended managing priority GRSG habitats such that discrete anthropogenic disturbances cover less than 3 percent of the total GRSG habitat, regardless of ownership. Anthropogenic features include, but are not limited to, paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, mines, and residences. There is a 3-percent habitat disturbance cap for Alternatives B, D, and F. The habitat disturbance cap for Alternatives B and D applies to anthropogenic disturbances. The habitat disturbance cap for Alternative F applies to anthropogenic disturbances and fire.

2.5.3 Alternative A: No Action

Alternative A meets the CEQ requirement that a No Action Alternative be considered. This alternative continues current management direction and prevailing conditions derived from the existing RMP. Goals and objectives for resources and resource uses are based on the most recent RMP decisions, along with associated amendments, activity and implementation level plans, and other management decision documents. Laws, regulations, and BLM policies that supersede RMP decisions would apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to such activities as utility corridor construction, livestock grazing, mineral leasing and development, and recreation would also remain the same. The BLM would not modify existing or establish additional criteria to identify site-specific use levels for implementation.

No single factor is the cause of declining GRSG populations. However, USFWS findings identify threats that have adversely affected the number of GRSG and the amount, distribution, and quality of their habitat. Inadequacy of regulatory

mechanisms was identified as a major risk to the GRSG in USFWS's finding to list the GRSG. The principal regulatory mechanism in BLM RMPs, as identified by USFWS, is conservation measures.

The Oregon BLM planning team reviewed this RMPA/EIS for management decisions related to GRSG and their habitat. The RMPs address the management of GRSG and their habitat in varying levels of detail and specificity.

Alternative A, the No Action Alternative, is composed of decisions established in the current RODs for the following RMPs: Andrews, Brothers LaPine, Baker, Lakeview, Southeastern Oregon, the Steens Mountain Cooperative Management and Protection Area, Three Rivers, and Upper Deschutes. Alternative A also is composed of associated amendments, activity and implementation level plans, and other management decision documents, as well as laws, regulations, and BLM policies that supersede RMP decisions.

IM 2012-044, the BLM National Greater Sage-Grouse Land Use Planning Strategy, requires that the BLM "consider all applicable conservation measures when revising or amending its RMPs in GRSG habitat," including those developed by the NTT. IM 2012-044 would be superseded by the direction established in the ROD for the GRSG plan amendments, of which this Draft EIS is a part. The IM provides interim guidance and does not provide the regulatory certainty USFWS has requested. Regulatory certainty will be an important factor in USFWS's decision on whether to list the GRSG under the ESA; however, regulatory certainty alone would not be enough for USFWS to not list the species. As the IM and other existing guidance constitute existing decisions, the BLM has the option of carrying forward those decisions as part of the final ROD.

The individual RMPs in eastern Oregon addressed GRSG habitats and GRSG specifically at varying levels of priority; all of the RMP decisions in eastern Oregon were made before the new interim guidance was issued. For these reasons, there is often a disconnect between the new policy and existing policy. This adds to the uncertainty surrounding the management of the GRSG in eastern Oregon. This is especially evident with respect to vegetation management, as many of the RMPs do not address the specific habitat needs of the GRSG and therefore do not provide a strong basis for GRSG habitat conservation decisions.

Furthermore, the current RMPs do not address climate change. Based on current climate models, over the long term, changing climate conditions are expected to generally limit the area in which GRSG habitat could survive to above 5,000 feet in eastern Oregon (McKenney et al. 2007, 2011).

Also, many of the current RMPs do not address potential renewable energy development, which is an important consideration both economically and for

the conservation of GRSG habitat. This is because many of the same areas targeted for renewable development include GRSG habitat.

Finally, the current interim policy provides direction across a wide range of resources, but without regard to specific local conditions; not all of the factors causing population decline across the range of the GRSG are equally relevant to eastern Oregon, and threats to habitat can and do vary within WAFWA MZs. For example, while high numbers of wild horses in Nevada have shown significant impacts on GRSG habitat, wild horse numbers have generally been maintained within AML in Oregon, minimizing those impacts. Also, disturbance of GRSG habitat from grazing practices are not consistent range wide. Finally, habitat fragmentation is a bigger threat in the Prineville District than in the southern portions of the Burns and Vale Districts.

Appendix B, Greater Sage-Grouse Management in Oregon Sub-Region Resource Management Plans, lists management actions in the current RMPs that are specific to GRSG and their habitat. These actions are from the RMPs being amended by this RMPA/EIS. Due to the variability and number of RMPs being amended, the description of Alternative A above is a broad discussion of general GRSG management, whereas Appendix B provides a more comprehensive collection of specific GRSG and sagebrush management.

2.5.4 Alternative B

The BLM used GRSG conservation measures in the NTT report (NTT 2011) to form management direction under Alternative B. The BLM was one of the members of the NTT. BLM management actions, in concert with other state and federal agencies and private landowners, play a critical role in the future trends of sage-grouse populations.

To ensure BLM management actions are effective and based on the best available science, the National Policy Team created the NTT in August 2011. The BLM's objective for chartering this planning strategy was to develop new or revised regulatory mechanisms, through RMPs, to conserve and restore the sage-grouse and its habitat on BLM-administered lands range-wide and over the long term. The key distinction about Alternative B is that conservation measures under Alternative B are focused on PPMA (areas that have the highest conservation value to maintain or increase sage-grouse populations). They are also focused on Great Basin-wide concerns for GRSG.

2.5.5 Alternative C

During scoping for this RMPA/EIS, individuals and conservation groups submitted management direction recommendations for protecting and conserving GRSG and habitat range-wide. The recommendations, in conjunction with resource allocation opportunities and internal sub-regional BLM input, were reviewed in order to develop BLM management direction for GRSG under Alternatives C and F. These alternatives contain a mixture of conservation measures from the NTT report and public input.

Conservation measures in Alternative C are focused on a passive restoration approach to PPMA and PGMA. PGMA is occupied (seasonal or year-round) habitat outside of PPMA. These areas have been identified by state fish and wildlife agencies in coordination with respective BLM offices. A noteworthy difference between Alternatives C and F is that Alternative C provides minimal guidance for resources, other than livestock grazing, and that most of the management allocations apply to both PPMA and PGMA.

2.5.6 Alternative D

Alternative D is the Oregon BLM Alternative. It emphasizes balancing resources and resource use among competing human interests and land uses and conserving natural and cultural resource values; at the same time it sustains and enhances ecological integrity across the landscape, including plant, wildlife, and fish habitat. Alternative D incorporates local adjustments to the NTT report and habitat boundaries. This is to provide a balanced level of protection, restoration, enhancement, and use of resources and services to meet ongoing programs and land uses. Conservation measures under Alternative D are focused on both PPMA and PGMA.

Alternative D's primary objective is to maintain or enhance GRSG habitat to establish a mix of sagebrush classes (**Table 2-2, Desired Mix of Sagebrush Classes by Sagebrush Type for Alternative D**) so as to provide a sustainable habitat for the GRSG.¹ This objective allows for human-caused disturbance (including current on-the-ground disturbance) to cover less than 3 percent of PPMA, regardless of ownership; it requires appropriate mitigation for habitat disturbance within PPMA and PGMA. It prioritizes enhancement and restoration of GRSG habitat in order to maintain and or increase GRSG abundance and distribution. It also includes management actions, requirements, and stipulations to meet those objectives that are targeted to the resource issues and challenges specific to eastern Oregon GRSG. Actions described in this and all alternatives are subject to valid existing rights.

Alternative D establishes management actions across GRSG habitat in eastern Oregon. It also recognizes that not all GRSG habitat is of equal importance and that the BLM's resources must be prioritized and directed toward areas that will most benefit the GRSG over the long term. Thus, in order to focus the BLM's management attention and resources, this alternative identifies a network of GRSG focal areas (see **Table 2-3, Focal Areas in the Planning Area**) within

¹The sagebrush and cover classes identified in Table 2-2 are derived from the ODFW's Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat (Hagen 2011) and Assessing Big Sagebrush at Multiple Spatial Scales: An Example in Southeast Oregon (Karl and Sadowski 2005). The BLM has modified the mix to account for the amount of vegetation cover that can currently be supported by the landscape. See **Chapters 3, Affected Environment, and 4, Environmental Consequences**, for a further discussion of this.

Table 2-2
Desired Mix of Sagebrush Classes by Sagebrush Type for Alternative D

Sagebrush Type	General Description	Characteristic Plant Community	Class 1 (A)²	Class 2 (A)²	Class 3 (A, B)²	Class 4 (A, B)²	Class 5 (A)²
Shallow-dry	Very shallow soils and very dry sites not capable of producing at least 600 pounds per acre of grass on any sites or in any type of year. ¹	Low sagebrush/Sandberg's bluegrass; includes the driest Wyoming big sagebrush types	20% (15-25%)	50% (35-60%)	30% (20-45%)	N/A ³	N/A ³
Warm-dry	Shallow to moderately deep soils and dry sites capable of producing at least 600 pounds per acre of grass only on best sites or in wet years. ¹	Wyoming big sagebrush/bluebunch wheatgrass-Thurber's needlegrass; includes some moderately productive low sagebrush sites and dry mountain big sagebrush sites	15% (0-25%)	15% (0-25%)	25% (10-40%)	45% (25-70%)	N/A ³
Cool-moist	Moderately deep to deep soils and moist sites capable of producing at least 600 pounds per acre of grass on average and high productivity sites or average and wet years. ¹	Mountain big sagebrush-Idaho fescue; includes productive low sagebrush communities and highly productive Wyoming big sagebrush sites; may include antelope bitterbrush as a co-dominant with big sagebrush	5% (0-5%)	10% (0-15%)	20% (10-30%)	35% (20-60%)	30% (20-60%)

Note:

¹ Based on ecological site descriptions

² Median value and range, modified from Evers 2010

³ Site not capable of producing this class

Class 1: Early Seral; Class 2: Midseral Open Canopy; Class 3: Late Seral Closed Canopy for the Shallow-Dry Sagebrush Group, Late Seral Open Canopy for the Warm-Dry Sagebrush Group and Midseral Open Canopy for the Cool-Moist Sagebrush Group; Class 4: Late Seral Closed Canopy for the Warm-Dry Sagebrush Group and Late Seral Open Canopy for the Cool-Moist Group; Class 5: Late Seral Closed Canopy for the Cool-Moist Sagebrush Group (Karl and Sadowski 2005).

**Table 2-3
Focal Areas in Planning Area**

Proposed GRSG Focal Areas	PGMA Acres	PPMA Acres	Outside of GRSG Habitat	Total Focal Area Acres
Climate change consideration areas	738,075	1,484,514	249,019	2,222,588
High-density breeding areas	70,839	2,194,123	6,747	2,264,962
Restoration opportunity areas	693,181	1,853,720	38,999	2,546,901
Any focal area regardless of type	1,391,178	3,778,694	280,995	5,450,866

Note: Many of the focal areas may have multiple classifications. As an example, one area may be classified as a high-density breeding area and a climate change consideration area. Acres were calculated by classification and thus are duplicated for those areas with more than one classification.

eastern Oregon (**Figure 2-2, Focal Areas in the Planning Area**). The focal areas cover a total of 5,169,871 acres, with 3,778,694 acres in PPMA and 1,391,178 acres in PGMA. Focal areas are not land allocations. Focal areas represent the best options for restoration activities related to projects or potential locations for off-site mitigation. The boundaries of these focal areas will change over time as habitat shifts and GRSG populations move across the landscape. These boundaries will be updated as new information becomes available.

Alternative D responds to the USFWS-identified threats to GRSG and their habitat in Oregon, as follows:

- Invasive species and conifer encroachment—Alternative D also provides priorities for sagebrush and juniper treatments. It sets a variety of integrated vegetation BMPs and directs fire management to protect sagebrush habitat. It formalizes fire suppression and fuels treatment practices to clarify guidance on how best to support healthy sagebrush ecosystems with those activities.

Mining—Also, where the COT report identifies mining as a threat to PPH—for example, for the central Oregon population—Alternative D allows for withdrawals from mineral entry but does not recommend or establish areas for withdrawal itself. With regard to fluid mineral development, it establishes various regulatory mechanisms to protect PPMA and PGMA, including various applications of no surface occupancy (NSO) stipulations (**Appendix F, Mineral Stipulations**). Also, PPMA would be closed to new salable mineral material site development, but existing sites would be maintained.

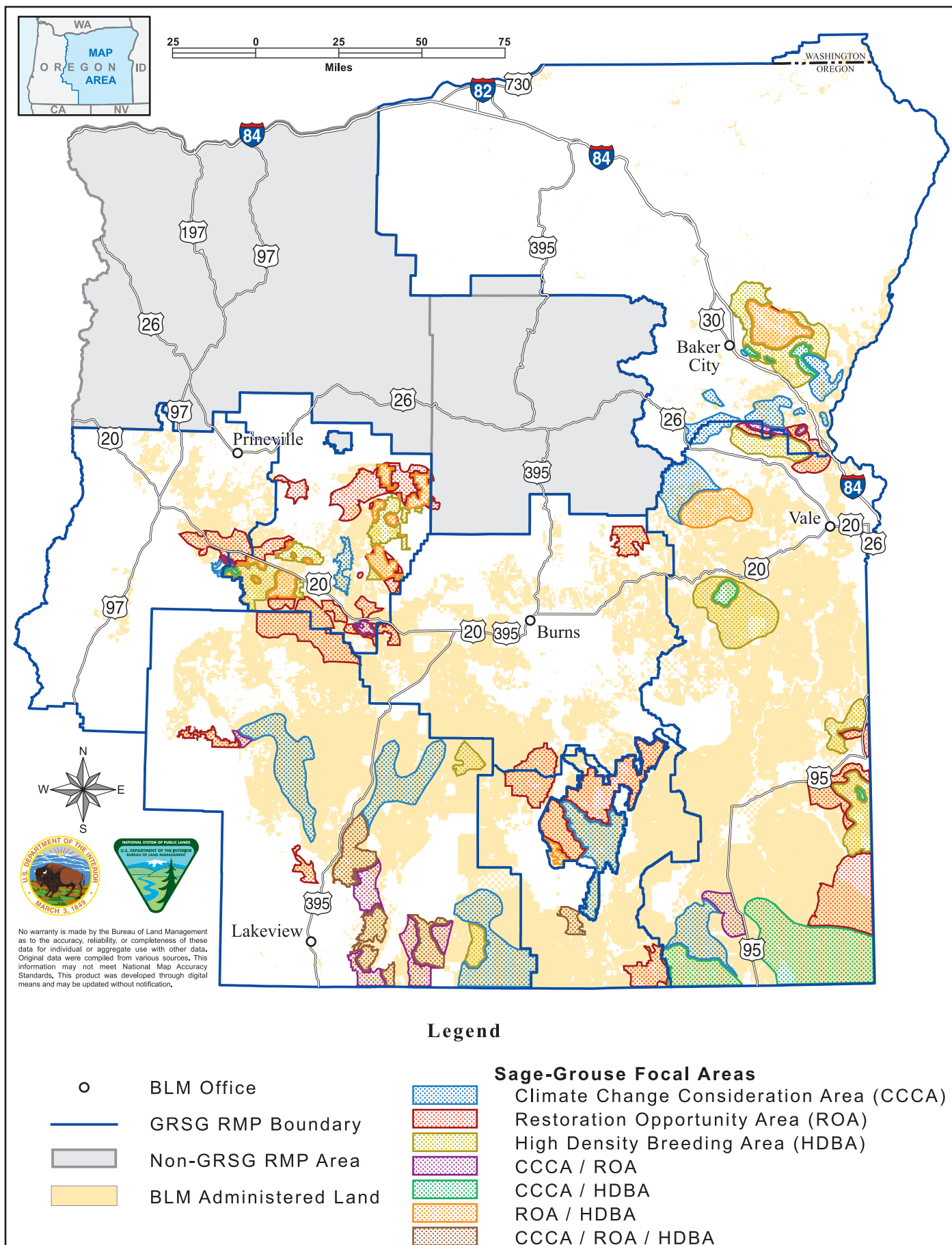


Figure 2-2: Focal Areas in the Planning Area

- **Livestock grazing**—GRSG habitat objectives are more likely to be achieved where rangeland health standards are being met. The BLM will prescribe adjustments to livestock grazing to achieve or progress toward achieving rangeland health standards. This should help maintain or improve GRSG habitat with suitable rating. The BLM will also implement as appropriate the habitat assessment framework (Stiver et al. 2010), or values adjusted for regional conditions, in priority landscapes to provide the greatest benefit to GRSG populations. Also, in designated wild horse and burro herd management areas, Herd Management Area Plans would incorporate direction regarding priority GRSG habitat characteristics to attain a suitable habitat rating.
- **Infrastructure**—Management of the GRSG under Alternative D is directed primarily at PPMA. This is identified as an avoidance area, with several exceptions, for new realty actions, including ROWs. Also in PPMA, motorized travel would be limited to existing routes (see **Figure 2-1**, Greater Sage-Grouse Habitat in the Planning Area). Exceptions would be granted for administrative access and other specifically exempted uses. Roads and trails would be limited to existing routes the rest of the year. Again, exceptions would be granted for administrative access and other specifically exempted uses. Maps of existing routes in the planning area are held on file in the BLM Oregon State Office and are available for public review at the following BLM website: <http://www.blm.gov/wo/st/en/prog/more/sagegrouse/oregon.html> and <http://www.blm.gov/or/energy/opportunity/sagebrush.php>.

In PGMA, Alternative D follows the same approach as Alternative B. It targets PGMA for conservation, enhancement, or restoration to restore GRSG habitat connectivity. It also identifies PGMA for potential to become PPMA and prioritizes those areas for enhancement and restoration.

Focal Area Approach

As mentioned above, Alternative D identifies a network of GRSG focal areas. This network is composed of three types of focal areas: climate change consideration areas, high-density breeding areas, and restoration opportunity areas.

Climate change consideration areas are generally high elevation areas (typically above 5,000 feet) with limited habitat disturbance. The BLM has identified these areas as likely to provide the best habitat for the GRSG over the long term, according to recent climate change modeling.

High-density breeding areas are high-quality habitat with a high density of active GRSG leks (patches of ground used for communal display in the breeding season).

Restoration opportunity areas are areas within existing GRSG habitat that, if restored, can provide better quality habitat and greater habitat connectivity for GRSG; these areas can also serve as a buffer to protect higher priority Focal Areas. The BLM has identified these areas in order to help focus and prioritize the following:

- Habitat restoration
- Off-site mitigation, consistent with the principles and standards of the Draft BLM Manual MS-1794 (Offsite Mitigation). The following website is for MS-1794, as of November 1, 2013: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2013.Par.57631.File.dat/IM2013-142_att1.pdf.
- Conservation partnering
- GRSG habitat and population monitoring and assessments
- Post-fire emergency stabilization and rehabilitation efforts

Restoration opportunity areas provide special consideration during fire suppression to help sustain productive GRSG habitat. This approach establishes management actions to conserve GRSG habitat across PPMA and PGMA. It also prioritizes actions to benefit the GRSG, for which there are limited resources, and directs them to the identified focal areas. See **Figure 2-1**, Greater Sage-Grouse Habitat in the Planning Area, for more detail.

The GRSG focal areas are not land allocations, as they establish priorities for only certain types of BLM administrative actions and do not restrict or prohibit activities.² Furthermore, the focal areas are not meant to be permanently fixed to a given area and are expected to shift over time as the landscape changes and the habitat most important to the GRSG shifts adaptively.

Changes to focal area boundaries would be based on the best available science and data and would be made conservatively, when there are clear habitat or population shifts. The intent of the focal areas is to benefit the GRSG over the long term; thus, changes to boundaries would be made only on a time-scale relevant to observing such benefits. Thus, for restoration opportunity areas and high-density breeding areas, boundary changes would be made only every ten years; in climate change consideration areas boundary changes would be made every 20 years. The BLM would coordinate annually with and seek the input of USFWS and ODFW on any changes to the focal area boundaries.

²See the Land Use Planning Handbook BLM H-1601-1, p. 13: "Land use plans must identify uses, or allocations, that are allowable, restricted, or prohibited on the public lands and mineral estate. These allocations identify surface lands and/or subsurface mineral interests where uses are allowed, including any restrictions that may be needed to meet goals and objectives."

Additionally, unlike land allocations, the focal areas include private lands. These are identified in order to provide private landowners who might be interested in partnering with the BLM to conserve quality GRSG habitat. As always, the BLM's decisions are limited to the lands it administers. Finally, in a number of instances the GRSG focal areas overlap existing land allocations. These include congressionally designated areas and administratively designated areas. In all cases, BLM management will remain consistent with the underlying congressional or administrative designation. Management to conserve the GRSG will not impair the values for which these areas were designated.

Focal areas may be designated for more than one reason (for example, restoration opportunity areas and climate change consideration areas), so there is some overlap of the total acres.

Habitat Mitigation

CEQ regulations for NEPA state that mitigation includes avoiding, minimizing, rectifying, reducing, eliminating, or compensating for adverse environmental impacts (CEQ 1981). Mitigation measures must be analyzed as part of the EIS process (40 CFR 1505.2[c]). The BLM's off-site mitigation policy is guided by Draft – Regional Mitigation Manual Section – 1794 (BLM 2013a). The manual provides policies, procedures, and instructions for identifying and implementing appropriate mitigation within (onsite) or outside the area of impact for particular land-use authorizations.

On-site mitigation measures are implemented within the area of impact, and are the primary and best means of avoiding, minimizing, rectifying, reducing, or eliminating impacts of proposed actions (see also 40 CFR 1508.20, or BLM 2008a, Section 6.8.4). On-site mitigation measures are most frequently incorporated into the proposed action or the alternatives as project design features or BMPs and are not usually specifically recognized as mitigation actions during a NEPA analysis.

Off-site mitigation is supplemental to on-site mitigation.

PPMA and PGMA—In priority and general management areas, specific off-site mitigation measures to compensate for the adverse environmental impacts would be analyzed by the applicable BLM district office in project-level NEPA analysis. This would be in areas where adverse environmental impacts could not be avoided, minimized, rectified, or reduced to acceptable levels through on-site mitigation. Those unavoidable adverse impacts would be mitigated for. In PPMA, it is the BLM's intention that adverse environmental impacts would be a rare occurrence; all efforts to avoid such impacts would be taken before determining that adverse environmental impacts were unavoidable. In PGMA, it is the BLM's intention that efforts to avoid adverse environmental impacts would be taken before determining that adverse environmental impacts were unavoidable.

Site selection—Off-site mitigation activities would be directed to GRSG focal areas, principally to focal areas identified as restoration opportunity areas (see **Figure 2-1**, Greater Sage-Grouse Habitat in the Planning Area). These zones include areas with an increased likelihood of success with restoration. Restoration within restoration opportunity areas should benefit GRSG and other sagebrush-dependent species. The BLM would identify potential mitigation sites, looking first to nearby focal areas. Mitigation sites should be of similar habitat potential to the impacted area. Mitigation sites would be selected based on the potential success of habitat enhancement or restoration to bring the area to the same quality or better as the habitat impacted. Priority would be given to mitigation sites near the impacted area, and mitigation would be implemented consistent with the principles and standards in the Draft BLM Manual MS-1794 (Offsite Mitigation).

Quantification of the impacted area—To determine how much mitigation is required, the unavoidable impacted area and corresponding off-site mitigation ratios and acreage would be determined in coordination with the ODFW and USFWS, with a mitigation goal of “no net loss” of GRSG habitat. Mitigation ratios may be increased based on the quality of the mitigation site to account for increased risk associated with restoration of lower quality habitats.

If a proposed project that would disturb GRSG or its habitat is in PPMA with evidence of GRSG use, the mitigation goal would be no net loss with a net gain. This would allow an overall increase in PPMA acres over time. Mitigation ratios would be identified at the project level based on the “no net loss” standard for PGMA and “no net loss, net benefit” standard for PPMA. This, also, may allow an increase in priority habitat acres over time. Mitigation would be implemented consistent with BLM Draft Manual MS-1794.

Collaboration—The BLM would collaborate with the ODFW and USFWS in selecting off-site compensatory mitigation measures.

2.5.7 Description of Alternative E

Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat (State Plan) and supporting background information is intended to promote effective management of GRSG and intact functioning sagebrush (*Artemisia* spp.) communities in Oregon (Hagen 2011). The State Plan describes the ODFW’s proposed management of GRSG. It also provides guidance to public land management agencies and land managers for GRSG conservation. GRSG conservation guidelines in the State Plan are designed to maintain (at a minimum) or enhance the quality (the optimum) of current habitats. They will also assist resource managers in achieving the population and habitat objectives of the State Plan.

Alternative E contains GRSG conservation guidelines from the State Plan. Because not all issues identified in the guidelines (e.g., juniper encroachment) are relevant to all regions of the state, only GRSG conservation guidelines from

the State Plan that are applicable to the areas covered by the RMPs being amended by this RMPA/EIS are incorporated where appropriate into Alternative E.

Greater Sage-Grouse Conservation Strategy for Oregon

Goals, policies, and objectives for GRSG population management and habitat management have been adopted into Oregon Administrative Rule (OAR), Chapter 635, Division 140. The administrative rules establish the state policy for the protection and enhancement of GRSG in Oregon. These policies will be implemented by ODFW staff as described in the State Plan. The following website is for OAR 635-140-0000: <http://www.dfw.state.or.us/OARs/140.pdf>.

According to OAR 635-140-0000, in accordance with the Wildlife Policy (Oregon Revised Statutes 496.012), the primary goal is to restore, maintain and enhance populations of greater sage-grouse such that multiple uses of populations and their habitats can continue. Regional and state population objectives shall be identified based on the best information available.

The following population management is found in OAR 635-140-0005:

- Policy: Manage greater sage-grouse statewide to maintain or enhance their abundance and distribution at the 2003 spring breeding population level, approximately 30,000 birds over the next 50 years.
- Objectives: Consistent with the population management policy, achieve the following regional population objectives:
 - (a) Baker Resource Area BLM: maintain or enhance greater sage-grouse abundance and distribution at the 2003 spring breeding population level, approximately 2,000 birds.
 - (b) Vale District BLM (excluding Baker Resource Area BLM): maintain or enhance greater sage-grouse abundance and distribution at the 2003 spring breeding population level, approximately 11,000 birds.
 - (c) Burns District BLM: maintain or enhance greater sage-grouse abundance and distribution at the 2003 spring breeding population level, approximately 4,300 birds.
 - (d) Lakeview District BLM: maintain or enhance greater sage-grouse abundance and distribution at the 2003 spring breeding population level, approximately 9,400 birds.
 - (e) Prineville District BLM: restore greater sage-grouse abundance and distribution near the 1980 spring breeding population level, approximately 3,000 birds.

The following habitat management is found in OAR 635-140-0010:

- Habitat goals:
 - (a) maintain or enhance the distribution of sagebrush habitats within greater sage-grouse range in Oregon; and
 - (b) manage those habitats in a variety of structural stages to benefit greater sage-grouse.
- Policy: manage a minimum of 70 percent of greater sage-grouse range for sagebrush habitat in advanced structural stages, sagebrush class 3, 4 or 5, with an emphasis on classes 4 and 5. The remaining approximately 30 percent includes areas of juniper encroachment, non-sagebrush shrubland, and grassland and should be managed to increase available habitat within greater sage-grouse range.
- Objective: To maintain and enhance existing sagebrush habitats and enhance potential habitats that have been disturbed such that there is no net loss of sagebrush habitat in the following regions:
 - (a) Baker Resource Area BLM: 82 percent sagebrush and 18 percent disturbed habitats.
 - (b) Vale District BLM (excluding Baker Resource Area): 70 percent sagebrush and 30 percent disturbed habitats.
 - (c) Burns District BLM: 68 percent sagebrush and 32 percent disturbed habitats.
 - (d) Lakeview District BLM: 72 percent sagebrush and 28 percent disturbed habitats.
 - (e) Prineville District BLM: 47 percent sagebrush and 53 percent disturbed habitats.

Fish and Wildlife Habitat Mitigation Policy

The Fish and Wildlife Habitat Mitigation Policy provides guidance to ODFW in evaluating the potential impact of development actions on fish and wildlife habitat. The Fish and Wildlife Habitat Mitigation Policy has been adopted into OAR, Chapter 635, Division 415. The Fish and Wildlife Habitat Mitigation Policy classifies habitat into one of six categories, depending upon the importance of the habitat to a specific species of fish or wildlife. The more important the habitat is to a particular species, the greater the potential that disturbing the habitat will have a negative impact on the species. The Fish and Wildlife Habitat Mitigation Policy sets guidelines to reduce, offset, or avoid the impact on fish and wildlife habitat. Specific terms are used in the policy to define the importance of the habitat to a particular species (ODFW 2012a). The following website is for OAR 635-415-0000: <http://www.dfw.state.or.us/OARs/415.pdf>.

According to Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0025), "Habitat Category I" is irreplaceable, essential habitat for a fish or wildlife species, population, or a unique assemblage of species and is limited on either a physiographic province or site-specific basis, depending on the individual species, population or unique assemblage. The mitigation goal for Category I habitat is no loss of either habitat quantity or quality. ODFW shall act to protect Category I habitats by recommending or requiring:

- (A) Avoidance of impacts through alternatives to the proposed development action; or
- (B) No authorization of the proposed development action if impacts cannot be avoided.

Mitigation Framework for Sage-Grouse Habitats

Mitigation Framework for Sage-Grouse Habitats (ODFW 2012b) outlines interim guidance for development of ODFW habitat mitigation recommendations associated with renewable energy development and associated infrastructure or other landscape scale industrial-commercial developments in GRSG habitat in Oregon. The guidance is interim until empirical data are available that quantify the effects of such development on GRSG populations. The following website is for Mitigation Framework for Sage-Grouse Habitats: http://www.dfw.state.or.us/wildlife/sagegrouse/docs/Oregon_Sage-grouse_Mitigation_Framework_3-20-12_Revision.pdf.

Mitigation Framework for Sage-Grouse Habitats only focuses on GRSG habitat needs as it pertains to sagebrush. There may be other species that also require mitigation. Sagebrush habitats not in Core or Low Density areas may serve as important linkages for GRSG movement and provide habitat for sagebrush dependent species. These habitats will be categorized under the ODFW's Mitigation Policy, but such sites will be evaluated on a case-by-case basis to determine appropriate classification (ODFW 2012b).

The framework outlined in Mitigation Framework for Sage-Grouse Habitats provides a methodology for quantifying only the area of impact. Basic project design rules or stipulations related to construction and maintenance (e.g., micro-siting, timing restrictions, and general project design) would remain an integral part of recommendations to decision-makers (ODFW 2012b).

These recommendations are to be implemented under the Core Area approach as described in Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitats (Hagen 2011). Specifically, the proposed method of habitat quantification is intended for projects that will impact GRSG habitat (ODFW 2012b).

As project proposals are submitted to land management and planning authorities, ODFW biologists will consider available information, including on-site analysis to determine (ODFW 2012b):

- 1) Are the habitats those upon which sage-grouse depend?
- 2) Is there evidence of sage-grouse presence?
- 3) Is the site-specific habitat both essential and irreplaceable?

If the project is in a Core Area and a site-specific analysis results in answering these questions yes, then the ODFW recommendation will be to avoid impacts on those habitats, to be consistent with Habitat Category I habitat recommendations per Fish and Wildlife Habitat Mitigation Policy described above (ODFW 2012b).

To meet the objective of the Fish and Wildlife Habitat Mitigation Policy (described above) with respect to sage-grouse habitats within Low Density Areas, mitigation sites would be prioritized and selected based on the following criteria in order of preference (ODFW 2012b):

- 1) Core Areas that occur within a Conservation Opportunity Area or other landscapes with on-going sage-grouse conservation actions
- 2) Core Areas that occur outside of a Conservation Opportunity Area
- 3) Low Density Areas that occur within a Conservation Opportunity Area or other landscapes with on-going sage-grouse conservation actions
- 4) Low Density Areas that occur outside of a Conservation Opportunity Area.

Conservation Opportunity Areas are landscapes of high biological integrity as identified in The Oregon Conservation Strategy (ODFW 2006). These areas have an increased likelihood of success with respect to conservation actions, and should benefit sage-grouse and other sagebrush dependent species.

ODFW Greater Sage-Grouse Habitats

IM 2012-044 directs the BLM to collaborate with state wildlife agencies to identify and map PPH and PGH. In Oregon, the BLM developed a PPH and PGH map based on the ODFW Sage-Grouse Core Areas map (ODFW 2011). The Core Areas map did not include all general GRSG habitat, so the BLM collaborated with the ODFW and the BLM National Operations Center to add a layer with general habitat data to the Core Areas map. However, the terminology used to define GRSG habitat differs between agencies, and this could cause confusion during the land use planning process.

The discussion below describes the interagency coordination that occurred to map PPH and PGH and to address various terminologies.

The ODFW Sage-Grouse Core Areas Map identifies two categories of habitat: Core Area habitat and Low Density habitat. Definitions for Core Area habitat and Low Density habitat are consistent with PPH and PGH, respectively; however, Low Density habitat and PGH are not interchangeable. Whereas PGH includes all known occupied or suitable sagebrush habitat, Low Density habitat does not. Of the 10,742,785 acres of sagebrush habitat identified in Table 17 of the ODFW GRSG Strategy (Hagen 2011), 2,272,203 acres occur outside of identified Core and Low Density areas.

Recognizing the need to capture all GRSG habitat in its PPH and PGH map, the BLM modeled occupied habitat for baseline year 2006, modified by removal of habitat within fire perimeters for 2007 through 2010. The model assumes a total removal of sagebrush within the fire perimeter and does not consider the possibility of internal unburned islands that might be present, but are unmapped at this scale. Thus, it underestimates the total amount of suitable habitat. GRSG are assumed to be present within a mapping unit at least once in the last 10 years. This currently occupied habitat (1,739,093 acres) was added to the Low Density habitat to create the PGH layer (**Figure 2-1**, Greater Sage-Grouse Habitat in the Planning Area).

In summary, the Oregon BLM GRSG PPH and PGH map was developed by the BLM and the ODFW using the best available data. PPH is equivalent to Core Area habitat, and PGH is composed of Low Density habitat and currently occupied habitat. The BLM did not modify the ODFW's Low Density habitat when it created PGH. The ODFW has accepted the BLM PPH and PGH GIS layer. The map may change as new information becomes available; such changes would be coordinated with the ODFW so that the delineation of PPH and PGH would provide for sustainable populations.

2.5.8 Alternative F

During scoping for this RMPA/EIS, individuals and conservation groups submitted management direction recommendations for protecting and conserving GRSG and habitat range-wide. The recommendations, in conjunction with resource allocation opportunities and internal sub-regional BLM input, were reviewed in order to develop BLM management direction for GRSG under Alternatives C and F. These alternatives contain a mixture of conservation measures from the NTT report and public input.

Conservation measures under Alternative F are focused on PPMA and PGMA. GRSG PGMA is occupied (seasonal or year-round) habitat outside of PPMA. These areas have been identified by state fish and wildlife agencies in coordination with respective BLM offices. A noteworthy difference between Alternatives C and F is that Alternative F provides greater restrictions on allowable uses and less resource management flexibility.

2.6 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

The alternatives detailed below were considered but were not carried forward for detailed analysis because they would not fulfill requirements of FLPMA or other existing laws or regulations; they did not meet the purpose of and need for action; they were already part of an existing plan, policy, or administrative function; or they did not fall within the limits of the planning criteria.

The FLPMA requires the BLM to manage public lands and resources in accordance with the principles of multiple use and sustained yield. This includes recognizing the nation's needs for domestic sources of minerals, food, timber, and fiber. Moreover, the BLM is required by law to recognize existing valid rights on BLM-administered lands and to manage public lands in accordance with existing laws. These include the General Mining Law of 1872 and the Mining and Minerals Policy Act of 1970.

2.6.1 USFWS-Listing Alternative

The inadequacy of regulatory mechanisms was identified as one of the listing factors for GRSG in USFWS's finding on the petition to list GRSG. USFWS identified the principal regulatory mechanism for the BLM as conservation measures in RMPs. In response to USFWS's findings, as well as to the BLM's own requirement to manage sensitive species, it is preparing plan amendments with associated EISs to incorporate conservation measures in RMPs for GRSG. The purpose of the RMPA is to identify and incorporate appropriate conservation measures in RMPs to conserve, enhance, and/or restore GRSG habitat by reducing, eliminating, or minimizing threats to that habitat. Because of this, the alternatives in this EIS focus on those conservation measures that can be incorporated into the RMPs. Although the potential listing of GRSG would also include conservation measures identified by USFWS, those conservation measures are not known at this time. Therefore, an alternative that includes a USFWS listing with associated speculative conservation measures for GRSG is not analyzed in detail.

2.6.2 Elimination of Livestock Grazing from BLM Lands Alternative

Alternative C analyzes eliminating grazing from BLM-administered lands containing PPMA and PGMA. An alternative that would eliminate livestock grazing from all National System of Public Lands administered by the BLM was not analyzed in detail. This is because no issues or conflicts were identified during planning that would be resolved by the complete elimination of grazing in the planning area. Where appropriate, removal of livestock and adjustments to livestock use has been incorporated. In RMPs, the BLM has considerable discretion through its grazing regulations to determine and adjust stocking levels, seasons-of-use, and grazing management activities and to allocate forage to uses of the BLM-administered lands.

An alternative that proposes to make the entire planning area unavailable for grazing would also be inconsistent with the intent of the Taylor Grazing Act. This act directs the BLM to do the following:

- Allow livestock to graze BLM-administered lands
- Adequately safeguard grazing privileges
- Provide for the orderly use, improvement, and development of the range
- Stabilize the livestock industry, which depends on public range under the Taylor Grazing Act

Livestock grazing is authorized by term permits and leases (authorizations) lasting up to 10 years. Grazing permit/lease renewal is a discretionary action that depends on compliance with terms and conditions of the expiring authorization. The current Oregon BLM practice is to analyze no grazing or reduced grazing alternatives as part of grazing authorization renewal when authorized livestock grazing is a cause for not meeting a standard.

2.6.3 Increased Livestock Grazing Alternative

During scoping and the alternatives development process, a number of individuals and cooperating agencies requested that the BLM consider an alternative that would increase the level of livestock grazing in GRSG habitat. This recommendation was based on empirical evidence, which shows that there could be a correlation between declines in GRSG and declines in the level of livestock grazing on BLM-administered lands. This alternative was considered but eliminated from detailed analysis for the following reasons:

- Alternatives being considered in this RMPA/EIS are science-based conservation measures that would meet the purpose and need for the project: to identify and incorporate appropriate conservation measures in RMPs to conserve, enhance, and/or restore GRSG habitat by reducing, eliminating, or minimizing threats to that habitat. There are currently no science-based studies that demonstrate that increased livestock grazing on BLM-administered lands would enhance or restore GRSG habitat or maintain or increase GRSG abundance and distribution.
- Over the past 10 years, on average, within GRSG habitat on BLM-administered lands in the Oregon sub-region, actual use has been below permitted use for various reasons, including drought, fire, and economics. Actual grazing has been below permitted use; because of this, under existing management, the level of grazing use could increase and stay within permitted levels. Further, no alternative specifically considers an increase in permitted livestock use. Despite this, the BLM would retain flexibility to consider increases in permitted livestock use on a case-by-case basis. Increases would

depend on permittee interest and rangeland conditions verified through monitoring. Increases in livestock grazing may be facilitated in GRSG habitat if there are changes in management, such as changes to existing grazing management systems, which optimize range conditions.

This alternative would be ineffective and would not help achieve the purpose and need.

2.6.4 Close All or Portions of Preliminary Priority or Preliminary General Management Areas to OHV Use Alternative

Through this amendment, the BLM has identified but has not studied in detail an alternative to designate new area closures for off-highway vehicle (OHV) use in PPMAs and PGMA. However, as explained more fully below, the BLM has analyzed alternatives to designate all areas within PPMAs and PGMA as “limited” to OHV use, if they are not already closed by existing planning efforts. Further, subsequent travel management plans would be developed to identify specific routes in limited areas that would be closed or eliminated in order to protect and conserve GRSG and its habitat. Finally, the BLM has analyzed existing OHV area closures within PPMAs and PGMA as part of Alternative A and as a decision common to all alternatives. The following provides the BLM’s rationale:

- There are areas within PPMAs and PGMA that are closed to OHV use, such as congressional designations, including Wilderness Areas. While these areas were closed to OHV use for purposes other than GRSG conservation, the BLM will analyze the impacts that these closures have on protecting GRSG and its habitat. These closures are analyzed in Alternative A and are carried forward across all alternatives in this RMPA/EIS.
- Alternative E would limit use to existing routes and would be limited seasonally; specifically, this alternative would impose 2-mile buffers to occupied leks during breeding season.
- Alternative F would limit use to existing routes. For future travel management planning, Alternative F would prohibit new road construction within 4 miles of active GRSG leks, and new road construction would be avoided in occupied GRSG habitat. Future travel management planning would be subject to NEPA.
- In addition, during the district or field office plan revision/amendment process, travel and transportation area decisions (open, limited, or closed) would be revisited at the local level, based on existing inventory information associated with a myriad of resources and resource uses.

- During the public scoping period for this RMPA, there were no specific areas identified for closure to carry forward for detailed analysis.

For the reasons identified above, this subject was not carried forward for detailed analysis in this RMPA. This alternative would be ineffective and would not help achieve the purpose and need.

2.7 ADAPTIVE MANAGEMENT

Adaptive Management is a decision process that promotes flexible resource management decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps with adjusting resource management directions as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a trial and error process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. On February 1, 2008, the Department of the Interior published its Adaptive Management Implementation Policy (522 DM 1). The adaptive management strategy presented within this EIS complies with this policy.

In relation to the BLM and Forest Service's National Greater Sage-grouse Planning Strategy (2012), adaptive management will help identify if GRSG conservation measures presented in this EIS contain the needed level of certainty for effectiveness. If principles of adaptive management are incorporated into the conservation measure in the plan (to ameliorate threats to a species), then there is a greater likelihood that a conservation measure or plan will be effective in reducing threats to that species. The following provides the adaptive management strategy for the Oregon Sub-region RMPA/EIS.

2.7.1 Adaptive Management and Monitoring

This RMPA/EIS contains a monitoring framework plan (**Appendix G**, Greater Sage-Grouse Monitoring Framework), which includes an effectiveness monitoring component. The agencies intend to use the data collected from the effectiveness monitoring to identify any changes in habitat conditions related to the goals and objectives of the plan and other range-wide conservation strategies (DOI 2004; Stiver et al. 2006; USFWS 2013a). When available from WAFWA and/or state wildlife agencies, information about population trends would be considered with effectiveness monitoring data (taking into consideration the lag effect response of populations to habitat changes [Garton et al. 2011]). The information collected through the Monitoring Framework Plan outlined in **Appendix G** would be used by the BLM to determine when adaptive management hard and soft triggers (discussed below) are met.

2.7.2 Adaptive Management Plan

The BLM will develop an adaptive management plan to provide certainty that unintended negative impacts on sage-grouse will be addressed before consequences become severe or irreversible, and to provide regulatory certainty to USFWS that appropriate action will be taken by the BLM. This adaptive management plan will:

- Identify science based soft and hard adaptive management triggers applicable to each population or subpopulation within the planning area
- Address how the multiple scale data from the Monitoring Framework Plan (**Appendix G**, Greater Sage-Grouse Monitoring Framework) will be used to gauge when adaptive management triggers are met
- Charter an adaptive management working group to assist with responding to soft adaptive management triggers.

Adaptive Management Triggers

Adaptive management triggers are essential for identifying when potential management changes are needed in order to continue meeting sage-grouse conservation objectives. The BLM will use a continuum of trigger points (soft and hard triggers), which will enhance the BLM's ability to effectively manage sage-grouse habitat. The soft and hard triggers that will be delineated in the adaptive management plan will (at a minimum):

- Be based upon the best available science
- Tied to the populations/demographics
- Take into account the importance of various seasonal habitat types
- Not be limited to a single time "window"

Soft triggers indicate when the BLM will consider adjustments to resource/resource use management. An adaptive management working group will help identify the causal factors as to what prompted the soft adaptive management trigger. The group will also provide recommendations to the appropriate BLM authorizing official (decision maker) regarding the applicable management response to address this trigger (e.g., effective mitigation, restoration, reclamation, and a LUP amendment or revision). When organizing the adaptive management working group, the BLM will invite participation from USFWS, local governments, and applicable state fish and game agencies.

Hard triggers indicate when the BLM will take immediate action to stop the continued deviation from conservation objectives. These actions could include one or more of the following (which may require subsequent NEPA):

- Temporary closures (as directed under BLM IM 2013-035)

- Immediate implementation of interim management policies and procedures through the BLM directives system
- Initiation of a new LUPA to consider changes to the existing LUP decisions.

2.8 GREATER SAGE-GROUSE MONITORING FRAMEWORK

The BLM's planning regulations, specifically 43 CFR 1610.4-9 require that LUPs establish intervals and standards for monitoring, based on the sensitivity of the resource decisions. Land use plan monitoring is the process of tracking the implementation of land use plan decisions (implementation monitoring) and collecting data/information necessary to evaluate the effectiveness of land use plan decisions (effectiveness monitoring). For sage-grouse, these types of monitoring are also described in the criteria found in the Policy for Evaluation of Conservation Efforts When Making Listing Decisions (68 *Federal Register* 15100). One of the criteria evaluates whether provisions for monitoring and reporting progress on implementation (based on compliance with the implementation schedule) and effectiveness (based on evaluation of quantifiable parameters) of the conservation effort are provided.

A guiding principle in the BLM National Sage-grouse Conservation Strategy (BLM 2004a) is that "the [BLM] is committed to sage-grouse and sagebrush conservation and will continue to adjust and adapt our National Sage-Grouse Strategy as new information, science and monitoring results evaluate effectiveness over time." In keeping with the WAFWA Sage-grouse Comprehensive Conservation Strategy (2006) and the Greater Sage-grouse Conservation Objectives: Final Report (USFWS 2013a), the BLM will monitor implementation and effectiveness of conservation measures in sage-grouse habitats.

On March 5, 2010 the *12-Month Findings for Petitions to List the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered* was posted as a Federal Register notice (75 *Federal Register* 13910). This notice stated:

...the information collected by BLM could not be used to make broad generalizations about the status of rangelands and management actions. There was a lack of consistency across the range in how questions were interpreted and answered for the data call, which limited our ability to use the results to understand habitat conditions for sage-grouse on BLM lands.

Standardization of monitoring methods and implementation of a defensible monitoring approach (within and across jurisdictions) will resolve this situation. The BLM and other conservation partners use the resulting information to guide implementation of conservation activities.

Monitoring strategies for sage-grouse habitat and populations must be collaborative, as habitat occurs across jurisdictional boundaries (52 percent BLM, 31 percent private, 8 percent Forest Service, 5 percent state, and 4 percent tribal and other federal; 75 *Federal Register* 13910), and because state fish and wildlife agencies have primary responsibility for population level management of wildlife, including population monitoring. Therefore, population efforts will continue to be conducted in partnership with state fish and wildlife agencies. The BLM and Forest Service are currently in the process of finalizing a Monitoring Framework Plan which will be included in the Proposed RMP Amendment/Final EIS. This framework will describe the process that the BLM will use to monitor implementation and effectiveness of RMP/LUP decisions. The Monitoring Framework will include: methods, data standards, and intervals of monitoring at broad and mid scales; consistent indicators to measure and metric descriptions for each of the scales (see Habitat Assessment Framework [HAF] and Assessment, Inventory, and Monitoring core indicators); analysis and reporting methods; and the incorporation of monitoring results into adaptive management. The need for fine and site-scale specific habitat monitoring may vary by area depending on existing conditions, habitat variability, threats, and land health. Indicators at the fine and site scales will be consistent with the HAF; however the values for the indicators could be adjusted for regional conditions. The major components of the Greater Sage-Grouse Monitoring Framework can be found in **Appendix G**.

More specifically, the Monitoring Framework Plan will discuss how the BLM will monitor and track implementation and effectiveness of planning decisions (e.g., tracking of waivers, modifications, and site-level actions). The two agencies will monitor the effectiveness of RMP/LUP decisions in meeting management and conservation objectives. Effectiveness monitoring will include monitoring disturbance in habitats as well as landscape habitat attributes. To monitor habitats the BLM will measure and track attributes of occupied habitat, priority habitat, and general habitat at the broad scale, and attributes of habitat availability, patch size, connectivity, linkage areas, edge effect, and anthropogenic disturbances at the mid-scale. Disturbance monitoring will measure and track changes in the amount of sagebrush in the landscape and changes in the anthropogenic footprint including the change in the density of energy development. The Monitoring Framework Plan will also include methodology for analysis and reporting for field offices, states, and BLM districts, including geospatial and tabular data for disturbance mapping (e.g., geospatial footprint of new permitted disturbances) and effectiveness of management actions.

The monitoring data will provide the indicator estimates for adaptive management. The BLM will adjust management decisions through an adaptive management process.

2.9 COMPARISON OF ALTERNATIVES

This section summarizes and compares the alternatives. To reduce the length and avoid confusion, only select meaningful differences among alternatives—that is, those with the most potential to affect resources—are summarized.

In accordance with the BLM *Land Use Planning Handbook* H-1601-1, LUP and plan amendment decisions are broad-scale and guide future land management actions and subsequent site-specific implementation decisions (BLM 2005d). Land use plan decisions fall into two categories: desired outcomes (goals and objectives) and allowable uses and actions to achieve outcomes.

- Goals are broad statements of desired outcomes that usually are not quantifiable.
- Objectives identify specific desired outcomes for resources. They may be quantifiable and measurable and may have established time frames for achievement.
- Allowable uses identify allocations that are allowable, restricted, or prohibited on BLM-administered lands and mineral estate.
- Actions identify measures or criteria to achieve desired objectives, including actions to maintain, restore, or improve land health.

Stipulations (NSO and controlled surface use [CSU], which fall under the allowable uses category) are also applied to surface-disturbing activities to achieve desired objectives (i.e., objectives).

Combined with the appendices and figures, **Tables 2-4**, Goals and Objectives for Alternatives, **2-5**, Summary Comparison of Resource Allocations in Greater Sage-Grouse Habitats, and **2-6**, Detailed Comparison of Action Alternatives by BLM Resource Program, highlight the meaningful differences between the alternatives in what management actions they establish and where those actions would be implemented. Goals and objectives for the alternatives in this RMPA/EIS are presented in **Table 2-4**.

Table 2-5, Summary Comparison of Resource Allocations in Greater Sage-Grouse Habitats, shows the resource allocations for various land uses. Under all alternatives, restrictions may be placed on lands that are open to certain uses. While information in this table may be useful in helping the reader understand some of the most noteworthy differences between the alternatives, there are also various limitations to the table.

To more fully understand the differences between the action alternatives, the reader should see the detailed description of the alternatives in **Table 2-6**, Detailed Comparison of Action Alternatives by BLM Resource Program. It contains management actions being considered for the action alternatives in this RMPA/EIS and provides the basis for impact analysis. The decisions included in

this table will be used to amend the eight BLM RMPs described in **Chapter I**, Introduction. Based on the number of plans being amended as part of this RMPA/EIS, it was not possible to include details from every plan in **Table 2-6** for Alternative A.

The Oregon sub-region RMPs being amended by this RMPA/EIS identify uses, or allocations, that are allowable, restricted, or prohibited on the BLM-administered surface lands and federal mineral split-estate lands. These allocations identify surface lands and subsurface mineral interests where uses are allowed, including any restrictions that may be needed to meet goals and objectives. Land use plans also identify areas where specific uses are excluded to protect resource values. Certain lands may be open or closed to specific uses, based on legislative, regulatory, or policy requirements or criteria to protect sensitive resource values. The management actions and resource allocations were not created to directly manage PPH or PGH. This is because these habitat areas were not identified until after the RMPs were adopted. However, management actions and resource allocations in the RMPs can still affect PPH and PGH that happen to share the same area as a management action and resource allocation. In these instances, existing RMP management actions and resource allocations (which were adopted before the identification of PPH and PGH) influence these recently identified GRSG habitats and the species. Consequently, Alternative A in **Table 2-5**, Summary Comparison of Resource Allocations in Greater Sage-Grouse Habitats, identifies where resource allocations happen to coincide with PPH and PGH.

Although management actions and resource allocations in the RMPs being amended by this RMPA/EIS were not created to directly manage PPH or PGH, there are some management actions and resource allocations that were created to directly manage GRSG or sagebrush. These are in **Appendix B**, Greater Sage-Grouse Management in Oregon Sub-Region Resource Management Plans.

Decisions made by this RMPA/EIS are anticipated to be subsequently implemented. Restrictions on resource uses (e.g., closed to leasing) made through this amendment apply for the life of the RMPs being amended. Actions taken or authorized by the BLM during RMP implementation would comply with standard practices, RDFs, and BMPs; therefore, these practices and guidelines are considered part of each alternative.

2.9.1 How to Read Tables 2-4 and 2-6

Goals, objectives, allowable uses, and actions to achieve outcomes form the basis for **Tables 2-4**, Goals and Objectives for Alternatives, and **2-6**, Detailed Comparison of Action Alternatives by BLM Resource Program, and show the proposed decisions. Goals, objectives, allowable uses, and actions are categorized by BLM resource program. In general, only those resources and resource uses that have been identified as planning issues have notable differences between the alternatives. These particular actions would be

implemented regardless of which alternative is ultimately selected. Actions that are applicable to more than one but not all alternatives are indicated by denoting those goals, objectives, or actions as the “same as Alternative B,” for example. Actions identified as “same as Alternative A” equate to continuing management contained in existing RMPs.

In some cells, there is a “—” as a placeholder that indicates that there is no similar goal, objective, or action to the other alternatives, or that the similar goal, objective, or action is reflected in another management direction in the alternative.

Appendix B, Greater Sage-Grouse Management in Oregon Sub-Region Resource Management Plans, lists management actions in the current RMPs that are specific to GRSG and their habitat. These actions are from the RMPs being amended by this RMPA/EIS. Due to the variability and number of RMPs being amended, management actions for Alternative A cannot be condensed in to succinct, comprehensive management actions in individual cells in **Table 2-6**, Detailed Comparison of Action Alternatives by BLM Resource Program. **Appendix B** provides a comprehensive collection of specific GRSG and sagebrush management for Alternative A.

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Table 2-4
Goals and Objectives for Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Special Status Species—Greater Sage-Grouse (SSS)					
Goal A-SSS 1: —	Goal B-SSS 1: Maintain or increase Sage-Grouse abundance and distribution by conserving, enhancing, or restoring the sagebrush ecosystem that populations depend on, in cooperation with other conservation partners.	Goal C-SSS 1: Similar to Alternative F with an emphasis on passive restoration and considering all occupied habitat as equally important.	Goal D-SSS 1: Same as Alternative B.	Goal E-SSS 1: Restore, maintain, and enhance populations of GRSG, such that multiple uses of populations and their habitats can continue.	Goal F-SSS 1: Maintain and increase current Sage-Grouse abundance and distribution by conserving, enhancing, or restoring the sagebrush ecosystem.
Objective A-SSS 1: —	Objective B-SSS 1: Protect priority Sage-Grouse habitats from human disturbances that will reduce distribution or abundance of Sage-Grouse.	Objective C-SSS 1: Same as Alternative A.	Objective D-SSS 1: Maintain or improve connectivity to and within PPMA and PGMA to promote movement and genetic diversity for population persistence and expansion.	Objective E-SSS 1: Maintain or enhance GRSG abundance and distribution at 2003 spring breeding population level, or approximately 30,000 birds over the next 50 years.	Objective F-SSS 1: —
Sub-objective A-SSS 1: —	Sub-objective B-SSS 1: Designate priority Sage-Grouse habitats for each Western Association of Fish and Wildlife Agencies management zone (Stiver et al. 2006). Extend priority habitats across the current geographic range of Sage-Grouse that are large enough to stabilize populations in the short term and enhance populations over the long term.	Sub-objective C-SSS 1: —	Sub-objective D-SSS 1: —	Sub-objective E-SSS 1: Implement Core area approach, which identifies the least amount of area necessary to conserve 90% of Oregon's GRSG population with emphasis on highest density and important use areas that provide for breeding, wintering, and connectivity corridors. Identify Low density areas that provide breeding, summer, and migratory habitats.	Sub-objective F-SSS 1: —
Sub-objective A-SSS 2: —	Sub-objective B-SSS 2: Develop quantifiable habitat and population objectives with Western Association of Fish and Wildlife Agencies and other conservation partners at the management zone or other appropriate scales. Develop a monitoring and adaptive management strategy to track whether these objectives are being met and allow for revisions to management approaches if they are not.	Sub-objective C-SSS 2: —	Sub-objective D-SSS 2: —	Sub-objective E-SSS 2: —	Sub-objective F-SSS 2: —
Sub-objective A-SSS 3: —	Sub-objective B-SSS 3: Manage priority Sage-Grouse habitats so that discrete human disturbances cover less than 3% of the total Sage-Grouse habitat regardless of ownership. Human features include paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal	Sub-objective C-SSS 3: —	Sub-objective D-SSS 3: Manage PPMA so that human disturbance covers less than 3% regardless of ownership.	Sub-objective E-SSS 3: Avoid impacts on Core areas if there is evidence of GRSG presence and the site-specific habitat is both essential and irreplaceable. Do not authorize development action in these areas if the impacts cannot be avoided. GRSG presence may include observation of birds using the site or recent signs of	Sub-objective F-SSS 3: —

Table 2-4
Goals and Objectives for Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
	<p>wells and associated facilities, pipelines, landfills, homes, and mines.</p> <ul style="list-style-type: none"> In priority habitats where the 3% disturbance threshold is already exceeded from any source, the BLM will permit no further human disturbances until enough habitat has been restored to maintain the area under this threshold (subject to valid existing rights). In this instance, an additional objective will be designated for the priority area to prioritize and reclaim/restore human disturbances so that 3% or less of the total priority habitat area is disturbed within 10 years. 			<p>lek attendance (e.g., fresh droppings and feathers).</p> <p>If a proposed project is in a Low Density area or in any other sagebrush habitat outside of Core areas with documented GRSG habitat and GRSG presence, and impacts cannot be avoided, then mitigate for those habitats such that there is "no net loss and with a net benefit."</p>	
Sub-objective A-SSS 4: —	Sub-objective B-SSS 4: Quantify and delineate general habitat for capability to provide connectivity among priority areas (Knick and Hanser 2011).	Sub-objective C-SSS 4: —	Sub-objective D-SSS 4: —	Sub-objective E-SSS 4: Develop and maintain maps that identify Core area habitats necessary to conserve 90% of Oregon's GRSG population with emphasis on highest density and important use areas that provide for breeding, wintering and connectivity corridors.	Sub-objective F-SSS 4: —
Sub-objective A-SSS 5: —	Sub-objective B-SSS 5: Conserve, enhance, or restore Sage-Grouse general habitat and connectivity (Knick and Hanser 2011) to promote movement and genetic diversity, with emphasis on those habitats occupied by GRSG.	Sub-objective C-SSS 5: —	Sub-objective D-SSS 5: Same as Alternative B. Also, identify general habitat that has the potential to become priority; prioritize restoration and enhancement.	Sub-objective E-SSS 5: —	Sub-objective F-SSS 5: —
Sub-objective A-SSS 6: —	<p>Sub-objective B-SSS 6: Assess general Sage-Grouse habitats to determine potential to replace lost priority habitat caused by perturbations and/or disturbances and provide connectivity (Knick and Hanser 2011) between priority areas.</p> <ul style="list-style-type: none"> These habitats should be given some priority over other general Sage-Grouse 	Sub-objective C-SSS 6: —	Sub-objective D-SSS 6: In general habitat, require mitigation to avoid, minimize, and mitigate impacts on GRSG habitat from BLM-administered activities.	Sub-objective E-SSS 6: In Low Density and all other GRSG habitat outside of Core habitat, require mitigation to avoid, minimize, and mitigate impacts on GRSG habitat caused by BLM-administered activities. Follow the Oregon Department of Fish and Wildlife (ODFW) mitigation policy or its successor.	Sub-objective F-SSS 6: —

Table 2-4
Goals and Objectives for Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
	habitats that provide marginal or substandard Sage-Grouse habitat. <ul style="list-style-type: none"> Restore historical general habitat functionality to support Sage-Grouse populations guided by objectives to maintain or enhance connectivity. Total area and locations will be determined at the land use plan level. Enhance general sage-grouse habitat such that population declines in one area are replaced elsewhere within the habitat. 			Develop Core area maps and climate change models to identify those Core areas likely to persist as sagebrush into the future. Identify opportunities to conserve and protect those resilient habitats.	
Objective A-SSS 2: —	Objective B-SSS 2: —	Objective C-SSS 2: —	Objective D-SSS 2: —	Objective E-SSS 2: —	Objective F-SSS 2: Restore and maintain sagebrush steppe to its ecological potential in occupied GRSG habitat.
Objective A-SSS 3: —	Objective B-SSS 3: —	Objective C-SSS 3: —	Objective D-SSS 3: —	Objective E-SSS 3: —	Objective F-SSS 3: Establish a system of sagebrush reserves to anchor recovery by protecting the highest quality habitats.
Objective A-SSS 4: —	Objective B-SSS 4: —	Objective C-SSS 4: —	Objective D-SSS 4: —	Objective E-SSS 4: —	Objective F-SSS 4: Develop and implement methods for prioritizing and restoring sagebrush steppe invaded by nonnative plants.
Vegetation (VG)					
Goal A-VG 1: —	Goal B-VG 1: In order to maintain or increase current populations, manage or restore priority areas so that at least 70% of the land cover provides adequate sagebrush habitat to meet Sage-Grouse needs.	Goal C-VG 1: —	Goal D-VG 1: Maintain or enhance GRSG habitat (includes both PPMA and PGMA) to establish a mix of sagebrush classes, as identified in Table 2-2. Also provide priorities for sagebrush treatments and juniper treatments based on ecological and management characteristics. Maintain or enhance the quantity and quality of GRSG habitat within the existing range of the species. Where possible and feasible, restore	Goal E-VG 1: Retain >70% of GRSG range as sagebrush habitat in advanced structural stages, sagebrush class 3, 4, and 5, with an emphasis on 4 and 5. Remaining <30% could include areas of juniper encroachment, non-sagebrush shrubland, and grassland with the potential for enhancement.	Goal F-VG 1: —

Table 2-4
Goals and Objectives for Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
			<p>lost habitat to functionality as GRSG habitat.</p> <p>Where feasible, increase the resiliency of GRSG habitat to disturbances and climate change and reduce fragmentation.</p> <p>Limit or halt the further spread of existing invasive plant species, avoid the introduction of new invasive species, and reduce the extent of current infestations into GRSG habitat.</p> <p>Create a mix of sagebrush classes by sagebrush type as measured at the 5th field hydrologic unit scale (Table 2-2). Classes are defined in GRSG Conservation Assessment and Strategy for Oregon, page 73 and Appendix II (Hagen 2011) and BLM Tech Note 417 (Karl and Sadowski 2005).</p>		
Objective A-VG I: —	Objective B-VG I: —	Objective C-VG I: —	<p>Objective D-VG I: Treat approximately 30% of GRSG habitat over the next 10 years, averaging 3% per year, to reduce the probability of large homogeneous burn patterns and unacceptable wildfire effects, to limit juniper encroachment, and to control invasive species. Treatment assessment should include evaluation of acceptable wildfire effects and recovery and use of unplanned naturally ignited fires.</p>	<p>Objective E-VG I: To maintain and enhance existing sagebrush habitats and enhance potential habitats that have been disturbed such that there is no net loss of sagebrush habitat in the following regions:</p> <p>(a) Baker Resource Area BLM: 82% sagebrush and 18% disturbed habitats.</p> <p>(b) Vale District BLM (excluding Baker Resource Area): 70% sagebrush and 30% disturbed habitats.</p> <p>(c) Burns District BLM: 68% sagebrush and 32% disturbed habitats.</p> <p>(d) Lakeview District BLM: 72% sagebrush and 28% disturbed habitats.</p>	Objective F-VG I: —

Table 2-4
Goals and Objectives for Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
				(e) Prineville District BLM: 47% sagebrush and 53% disturbed habitats	
Goal A-VG 2: —	Goal B-VG 2: —	Goal C-VG 2: —	Goal D-VG 2: —	<p>Goal E-VG 2: Current and future land management will need to examine landscape patterns of sagebrush habitat and seek strategies to ensure that large connected patches of sagebrush are present. The implementation of the connectivity model and habitat monitoring techniques suggested in the ODFW plan will help minimize the impacts of habitat loss and fragmentation.</p> <p>Vegetation manipulations should benefit the long-term health of sagebrush habitat. Apply best management practices to maximize benefits of vegetative treatment to sage-grouse.</p>	Goal F-VG 2: —
Goal A-VG 3: —	Goal B-VG 3: —	Goal C-VG 3: —	Goal D-VG 3: —	<p>Goal E-VG 3: Juniper removal methods should promote the return sagebrush, native grasses, and forbs.</p> <p>Post-treatment management of juniper removal areas should promote the return of native grasses and forbs to the treatment area.</p>	Goal F-VG 3: —
Goal A-VG 4: —	Goal B-VG 4: —	Goal C-VG 4: —	Goal D-VG 4: —	<p>Goal E-VG 4: The goal of weed management should be to establish and maintain a healthy, functioning sagebrush plant community that has some degree of invasion resistance by maximizing ecological site occupation by native plants.</p> <p>Minimize the impact of invasive noxious weeds on sage-grouse habitat.</p> <p>Maximize benefits of vegetation treatments for sage-grouse through best management practices.</p>	Goal F-VG 4: —
Goal A-VG 5: —	Goal B-VG 5: —	Goal C-VG 5: —	Goal D-VG 5: —	Goal E-VG 5: Minimize the effects of	Goal F-VG 5: —

Table 2-4
Goals and Objectives for Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
				climate change on sage-grouse populations and habitats.	
Goal A-VG 6: —	Goal B-VG 6: —	Goal C-VG 6: —	Goal D-VG 6: —	Goal E-VG 6: Minimize the effects of predation on isolated, translocated, or declining populations where predation has been identified as a limiting factor and other management tools have not stabilized declining population.	Goal F-VG 6: —
Wild Horse and Burro (WHB)					
Goal A-WHB 1: —	Goal B-WHB 1: —	Goal C-WHB 1: —	Goal D-WHB 1: —	Goal E-WHB 1: The management goals for wild horses are to manage them as components of the BLM-administered lands in a manner that preserves and maintains a thriving natural ecological balance in a multiple use relationship.	Goal F-WHB 1: —
Objective A-WHB 1: —	Objective B-WHB 1: Manage wild horse and burro population levels within established appropriate management levels (AML).	Objective C-WHB 1: Same as Alternative A.	Objective D-WHB 1: Same as Alternative B. Also, prioritize gathers in priority GRSG habitat, unless removals are necessary in other areas to counteract impacts on rangeland health conditions and animal welfare, including herd health impacts. Review existing AMLs and modify when warranted to enhance or maintain GRSG habitat quality and quantity	Objective E-WHB 1: —	Objective F-WHB 1: Associated with the reduction in livestock grazing, reduce wild horse appropriate management levels by 25 percent for herd management areas that contain PPMA and PGMA to reduce grazing pressure on vegetation.
Objective A-WHB 2: —	Objective B-WHB 2: Prioritize gathers in priority GRSG habitat, unless removals are necessary in other areas to prevent catastrophic environmental issues, including herd health impacts.	Objective C-WHB 2: Same as Alternative A.	Objective D-WHB 2: Same as Alternative B.	Objective E-WHB 2: Prioritize wild horse gathers in sage-grouse areas that are over AML. Further measures may be warranted to conserve sage-grouse habitat even if horses are at, above, or below the appropriate AML.	Objective F-WHB 2: Same as Alternative B.
Wildland Fire Management (WFM)					
Goal A-WFM 1: —	Goal B-WFM 1: Fire and fuels management would contribute to the protection and enhancement of sagebrush habitat that support GRSG populations (including large contiguous blocks of sagebrush).	Goal C-WFM 1: —	Goal D-WFM 1: Fire and fuels management would contribute to the protection and enhancement of sagebrush habitat that support GRSG populations (including large contiguous blocks of sagebrush). Manage wildland fire and hazardous	Goal E-WFM 1: Reduce negative impacts of wildfire on sage-grouse through prompt and appropriate habitat reclamation or rehabilitation. Reduce negative impacts of prescribed fire on sage-grouse through appropriate strategic planning	Goal F-WFM 1: —

Table 2-4
Goals and Objectives for Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
			fuels to protect, enhance and restore GRSG habitat.	and field techniques. Reduce negative impacts of wildfire on sage-grouse through efficient fire suppression techniques.	
Objective A-WFM 1: —	Objective B-WFM 1: —	Objective C-WFM 1: —	Objective D-WFM 1: Limit the occurrence of large homogeneous burn patterns in GRSG habitat through rapid response and appropriate tactics based on conditions present at the time of the fire.	Objective E-WFM 1: —	Objective F-WFM 1: —
Objective A-WFM 2: —	Objective B-WFM 2: —	Objective C-WFM 2: —	Objective D-WFM 2: GRSG habitat protection is a high priority for the fire management program. A full range of fire management activities and options would be used to protect GRSG habitat within acceptable risk levels. Local agency administrators, resource advisors, and partner agencies would convey protection priorities for GRSG and their habitat to incident commanders.	Objective E-WFM 2: —	Objective F-WFM 2: —
Objective A-WFM 3: —	Objective B-WFM 3: —	Objective C-WFM 3: —	Objective D-WFM 3: No more than approximately 30% of a 5th field hydrological unit should be in the early seral stages of sagebrush, consistent with the biophysical settings/ecological sites present. See also Table 1 under Habitat Restoration/Vegetation Treatments.	Objective E-WFM 3: —	Objective F-WFM 3: —
Livestock Grazing/Range Management (LG/RM)					
Goal A-LG/RM 1: —	Goal B-LG/RM 1: —	Goal C-LG/RM 1: Prohibit grazing in occupied GRSG habitat.	Goal D-LG/RM 1: —	Goal E-LG/RM 1: Promote vegetation that supports nesting, brood-rearing and winter habitats including maintenance or recovery of shrub and herbaceous (native grasses and forbs) cover. Retain residual cover adequate to conceal sage-grouse nests and broods from predation, and plant communities that provide a diversity of plant and insect food sources. Minimize the effects of West Nile	Goal F-LG/RM 1: —

Table 2-4
Goals and Objectives for Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
				virus (or other pathogens) on populations.	
Objective A-LG/RM 1: —	Objective B-LG/RM 1: —	Objective C-LG/RM 1: —	<p>Objective D-LG/RM 1: Continue to make GRSG PPMA and PGMA available for livestock grazing. This would total 9,748,500 acres of BLM lands and 933,890 active AUMs. The number of AUMs on a permit may be adjusted during site-specific evaluations conducted during term permit renewals, allotment management plan development, or other appropriate implementation activity. Additionally, temporary adjustments can be made annually to livestock numbers, the number of AUMs, season of use, and other aspects of grazing within the terms and conditions of the permit, based on the permittees' livestock operation or an evaluation of a variety of forage and resource site-specific conditions.</p> <p>Manage livestock grazing to maintain or improve priority GRSG habitat by achieving land health standards.</p>	Objective E-LG/RM 1: —	Objective F-LG/RM 1: Encourage partners to monitor effects of retiring grazing permits in GRSG habitat.
Objective A-LG/RM 2: —	Objective B-LG/RM 2: —	Objective C-LG/RM 2: —	<p>Objective D-LG/RM 2: Manage grazing to provide adequate cover and sufficient forb diversity in nesting and brood-rearing habitat, consistent with ecological site capability, to reduce predation during nesting and to maintain integrity of riparian and wetland habitats.</p> <p>The objective is to provide habitat conditions consistent with the fine- and site-scale indicators and values that are consistent with the Habitat Assessment Framework or with values adjusted for regional conditions.</p>	Objective E-LG/RM 2: —	Objective F-LG/RM 2: —
Objective A-LG/RM 3: —	Objective B-LG/RM 3: —	Objective C-LG/RM 3: —	Objective D-LG/RM 3: —	Objective E-LG/RM 3: —	Objective F-LG/RM 3: Reduce by 25% the area grazed.

Table 2-4
Goals and Objectives for Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Recreation (RC)					
Goal A-RC I: —	Goal B-RC I: —	Goal C-RC I: —	Goal D-RC I: —	Goal E-RC I: Minimize the impact of recreational activities on sage-grouse habitats while ensuring continued enjoyment of the sagebrush steppe ecosystem.	Goal F-RC I: —
Lands and Realty (LR)					
Goal A-LR I: —	Goal B-LR I: —	Goal C-LR I: —	Goal D-LR I: —	Goal E-LR I: Minimize impacts of land-exchanges and the construction of anthropogenic features on sage-grouse habitat.	Goal F-LR I: —
Leasable Minerals—Leased Federal Fluid Mineral Estate (MLS)					
Objective A-MLS I: —	Objective B-MLS I: —	Objective C-MLS I: Conduct any oil, gas, or geothermal activity to maximize avoidance of impacts, based on evolving scientific knowledge of impacts.	Objective D-MLS I: —	Objective E-MLS I: Reduce risk of (avoid, minimize, and mitigate) impacts from energy development, transmission lines and associated infrastructure on sage-grouse habitat in accordance with habitat mitigation policy (OAR 635-415-0000).	Objective F-MLS I: —
Special Designations—Areas of Critical Environmental Concern (SD)					
Objective A-SD I: —	Objective B-SD I: —	Objective C-SD I: <ul style="list-style-type: none"> Designate all of PPMA as new ACECs. Manage ACECs for GRSG conservation. Manage existing ACECs for the values for which they were designated, per district resource management plans, following existing management actions described in the plans. 	Objective D-SD I: <ul style="list-style-type: none"> Prioritize maintenance, habitat restoration and conservation actions in priority ACEC for GRSG. Priority ACECs contain high amounts of quality GRSG habitat, either primary or general habitat, or known leks. Manage non-GRSG priority ACECs for the values for which they were designated, per district resource management plans, following existing management actions described in the plans. Manage Research Natural Areas, a special type of ACEC, as undisturbed vegetative reference areas for 	Objective E-SD I: —	Objective F-SD I: <ul style="list-style-type: none"> Designate 17 new ACECs within high-quality GRSG habitat to maintain and increase current GRSG abundance and to conserve or enhance the sagebrush ecosystem. Manage existing ACECs for the values for which they were designated, per district resource management plans following existing management actions described in the plans.

Table 2-4
Goals and Objectives for Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
			the plant community cells they represent that are important for GRSG. Use RNAs as part of a national interagency network of natural areas, which contain important ecological and scientific values and manage them for minimum human disturbance. Manage to preserve examples of all significant natural ecosystems and plant communities important for greater GRSG, for comparison with those influenced by human and BLM actions, to provide educational and research areas for ecological and environmental studies, and to preserve gene pools of typical and rare plants and animals.		

Note: In some cells, there is a “—” as a placeholder that indicates that there is no similar goal or objective to the other alternatives, or that the similar goal or objective is reflected in another portion of the alternative.

Table 2-5
Summary Comparison of Resource Allocations in Greater Sage-Grouse Habitats

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Sage-Grouse Habitat Areas (acres)	See Figure 2-1	See Figure 2-1	See Figure 2-1	See Figure 2-1	See Figure 2-1	See Figure 2-1
Preliminary Priority Habitat (PPH)	4,547,043	NA	NA	NA	NA	NA
Preliminary General Habitat (PGH)	5,662,632	NA	NA	NA	NA	NA
Preliminary Priority Management Area (PPMA)	NA	4,547,043	Same as Alt B	Same as Alt B	NA	Same as Alt B
Preliminary General Management Area (PGMA)	NA	5,662,632	Same as Alt B	Same as Alt B	NA	Same as Alt B
Core Areas	NA	NA	NA	NA	4,547,043	NA
Low Density	NA	NA	NA	NA	3,923,539	NA
Other Habitat (Currently Occupied Habitat (2006)	NA	NA	NA	NA	1,739,093	NA
Non-Habitat	2,408,353	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A
Total	12,618,028	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A
Resource or Resource Use						
Livestock Grazing (acres)³						
<i>Total Acres—Open for livestock grazing (acres)</i>	12,121,617	Same as Alt A	0	12,022,428	Same as Alt A	7,495,716 (75% of Sum of PPH and PGH Open for Alt A)
Open (PPH/PPMA/Core Area habitat)	4,492,467	Same as Alt A	0	4,417,924	Same as Alt A	3,369,350 (75% of PPH)
Open (PGH/PGMA/Low Density habitat)	5,501,821	Same as Alt A	0	5,479,819	3,824,263	4,126,365 (75% of PGH)

³ Allotments that have an allotment number are considered “Open.” Allotments that were classified as “NOALC” or “UNALT” are considered “Closed.” Allotments without an allotment number were not included. These acre calculations include the whole allotment even if it goes over the planning area boundary, except for portions of allotments that go into Nevada. Note that acres of PPH/PGH for grazing allotments may differ from Sage-Grouse Habitat acres, as there are areas of PPH/PGH where there is no allotment. For Alternative F, closed acreages were calculated based on areas currently open to grazing.

Table 2-5
Summary Comparison of Resource Allocations in Greater Sage-Grouse Habitats

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
<i>Total Acres—Closed to livestock grazing (acres)</i>	345,888	Same as Alt A	11,686,805	445,077	Same as Alt A	2,498,572 (25% of Sum of PPH and PGH of Alt A)
Closed (PPH/PPMA/Core Area habitat)	36,244	Same as Alt A	4,528,711	110,787	Same as Alt A	1,123,116 (25% of PPH)
Closed (PGH/PGMA/Low Density habitat)	142,522	Same as Alt A	5,644,343	164,525	88,203	1,375,455 (25% of PGH)
Wild Horse and Burro (acres)⁴						
<i>Total Acres—Herd Management Areas</i>	2,657,537	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A
PPH/PPMA/Core Area habitat	800,757	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A
PGH/PGMA/Low Density habitat	1,562,111	Same as Alt A	Same as Alt A	Same as Alt A	1,107,813	Same as Alt A
Comprehensive Travel and Transportation Management (acres)	Appendix A Figure 2-3	Appendix A Figure 2-4	Appendix A Figure 2-5		Appendix A Figure 2-6	
<i>Total Acres—Open to cross-country motorized travel</i>	6,811,890	4,141,539	1,202,694	Same as Alt B	3,913,675	Same as Alt B
Open in PPH/PPMA/Core Area habitat	2,669,145	0	Same as Alt B	Same as Alt B	Same as Alt B	Same as Alt B
Open in PGH/PGMA/Low Density habitat	2,940,051	2,938,846	0	Same as Alt B	1,610,288	Same as Alt B
<i>Total Acres—Closed – Off-Road use is prohibited</i>	300,328	Same as Alt A	Same as Alt A	Same as Alt A	274,965	Same as Alt A
Closed in PPH/PPMA/Core Area habitat	48,450	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A
Closed in PGH/PGMA/Low Density habitat	143,637	Same as Alt A	Same as Alt A	Same as Alt A	70,566	Same as Alt A
<i>Total Acres—Limited – Vehicle use only on existing roads and trails with additional seasonal restrictions.</i>	5,325,377	7,996,165 ⁵	10,937,171	Same as Alt B	6,043,851	Same as Alt B
Limited in PPH/PPMA/Core Area habitat	1,828,999	4,498,590	Same as Alt B	Same as Alt B	Same as Alt B with seasonal buffers	Same as Alt B with buffers

⁴ Total Acreage calculations are for Herd Management Areas (HMA) and does not include Herd Areas (HA), areas assumed to have been in the original 1971 Herd Areas, but which may never have had populations to manage. For Alternative E, we are reporting acres of HMA in Low Density only. Alternative A reports acres of HMA in PGH, which includes Low Density and currently occupied habitat. Currently occupied habitat adds 454,298 acres to the total.

⁵ Limited areas in Alternative B were calculated by obtaining the remainder of lands in PPH not already closed.

Table 2-5
Summary Comparison of Resource Allocations in Greater Sage-Grouse Habitats

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Limited in PGH/PGMA/Low Density habitat	2,576,796	Same as Alt A	5,518,995	Same as Alt A	1,710,392	Same as Alt A
Lands and Realty (acres) ⁶						
Rights-of-Way	Appendix A Figure 2-7	Appendix A Figure 2-8	Appendix A Figure 2-9	Appendix A Figure 2-10	Appendix A Figure 2-11	Appendix A Figure 2-12
Total Acres—Right-of-way (ROW) exclusion areas	857,564	4,866,030	10,682,124	Same as Alt A	Same as Alt A	Same as Alt C
Exclusion Area: PPH/PPMA/Core Area habitat	257,154	4,547,043	Same as Alt B	Same as Alt A	Same as Alt B unless non-habitat	Same as Alt B
Exclusion Area: PGH/PGMA/Low Density habitat	288,195	0	5,669,422	Same as Alt A	156,523	Same as Alt C
Total Acres—ROW avoidance areas	3,445,685	6,106,923	292,671	5,964,814	Same as Alt A	Same as Alt C
Avoidance Area: PPH/PPMA/Core Area habitat	1,336,146	0	Same as Alt B	4,289,889	Same as Alt A	Same as Alt B
Avoidance Area: PGH/PGMA/Low Density habitat	1,672,025	5,662,632	0	Same as Alt A	1,384,208	Same as Alt C
Land Tenure Zone	Appendix A Figure 2-13	Appendix A Figure 2-14	Appendix A Figure 2-15	Appendix A Figure 2-14		Appendix A Figure 2-14
Total Acres—Land Tenure – Zone 1	9,170,893	10,220,409	11,757,136	Same as Alt B	Same as Alt A	Same as Alt B
Zone 1: PPH/PPMA/Core Area habitat	3,501,415	4,547,043	Same as Alt B	Same as Alt B	Same as Alt A	Same as Alt B
Zone 1: PGH/PGMA/Low Density habitat	4,142,251	3,544,858	5,662,631	Same as Alt B	2,989,001	Same as Alt B
Total Acres—Land Tenure – Zone 2	3,299,184	3,307,072	818,812	Same as Alt B	Same as Alt A	Same as Alt B
Zone 2: PPH/PPMA/Core Area habitat	991,662	0	Same as Alt B	Same as Alt B	Same as Alt A	Same as Alt B
Zone 2: PGH/PGMA/Low Density habitat	1,468,460	Same as Alt A	0	Same as Alt A	907,742	Same as Alt A
Total Acres—Land Tenure – Zone 3	138,834	88,419	39,810	Same as Alt B	Same as Alt A	Same as Alt B
Zone 3: PPH/PPMA/Core Area habitat	50,395	0	Same as Alt B	Same as Alt B	Same as Alt A	Same as Alt B
Zone 3: PGH/PGMA/Low Density habitat	48,595	Same as Alt A	0	Same as Alt A	23,864	Same as Alt A
Areas of Critical Environmental Concern (acres)	Appendix A Figure 2-16	Appendix A Figure 2-16	Appendix A Figure 2-17	Appendix A Figure 2-16	Appendix A Figure 2-16	Appendix A Figure 2-18
Total Acres	715,048	Same as Alt A	5,063,388 ⁷	Same as Alt A	Same as Alt A	4,755,249 ⁸

⁶ Avoidance areas for Alternative D were calculated by obtaining the remainder of lands in PPH not in exclusion areas. There are 257,154 acres of exclusion areas in PPH. The remainder of the 4,547,043 acres of PPH is 4,289,889 acres. These areas are avoidance areas in Alternative D.

⁷ The total includes existing ACECs from Alternative A.

Table 2-5
Summary Comparison of Resource Allocations in Greater Sage-Grouse Habitats

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
PPH/PPMA/Core Area habitat	200,399	Same as Alt A	4,546,622	Same as Alt A	Same as Alt A	2,760,783
PGH/PGMA/Low Density habitat	251,233	Same as Alt A	Same as Alt A	Same as Alt A	129,409	1,492,804
Fluid Mineral Leasing (acres)	Appendix A Figure 2-19	Appendix A Figure 2-20	Appendix A Figure 2-21	Appendix A Figure 2-22	Appendix A Figure 2-23	Appendix A Figure 2-24
Closed to fluid mineral leasing						
<i>Closed to leasing—Total Acres – BLM surface/federal minerals</i>	3,134,159	6,530,944	10,615,593	Same as Alt A	Same as Alt B	Same as Alt C
Closed to leasing in PPH/PPMA/Core Area habitat – BLM surface/federal minerals	1,150,259	4,547,043	Same as Alt B	Same as Alt A	Same as Alt B	Same as Alt B
Closed to leasing in PGH/PGMA/Low Density habitat - LM surface/federal minerals	1,577,983	Same as Alt A	5,662,632	Same as Alt A	1,263,044	Same as Alt C
<i>Closed to leasing—Total Acres – Private or State surface/federal minerals (SPLIT)</i>	0	626,942	279,650	470,197	Same as Alt B	Same as Alt B
Closed to leasing in PPH/PPMA/Core Area habitat – Private or State surface/federal minerals (SPLIT)	0	209,824	Same as Alt B	53,079	Same as Alt B	Same as Alt B
Closed to leasing in PGH/PGMA/Low Density habitat – Private or State surface/federal minerals (SPLIT)	0	19,458	69,826	Same as Alt B	15,575	Same as Alt B
Open to fluid mineral leasing ⁹						
<i>Open to leasing—Total Acres – BLM surface/federal minerals</i>	9,483,868	6,087,084	2,002,435	Same as Alt A	Same as Alt B	Same as Alt C
Open to leasing in PPH/PPMA/Core Area habitat – BLM surface/federal minerals	3,396,784	0	Same as Alt B	Same as Alt A	Same as Alt B	Same as Alt B
Open to leasing in PGH/PGMA/Low Density habitat – BLM surface/federal minerals	4,084,649	Same as Alt A	0	Same as Alt A	2,665,747	Same as Alt C

⁸ The total includes existing ACECs from Alternative A.

⁹ Stipulations NSO, CSU, and TL are given in totals (PPH + PGH / PPMA + PGMA / Core Areas + Low Density, depending on alternative). A break out of PPH and PGH can be given and is included in the raw data.

Table 2-5
Summary Comparison of Resource Allocations in Greater Sage-Grouse Habitats

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
<i>Open to leasing—Total Acres – Private or State surface/federal minerals (SPLIT)</i> ¹⁰	2,639,007	2,012,065	2,359,357	Same as Alt A	Same as Alt B	Same as Alt B
Open to leasing in PPH/PPMA/Core Area habitat – Private or State surface/federal minerals (SPLIT)	209,824	0	Same as Alt B	Same as Alt A	Same as Alt B	Same as Alt B
Open to leasing in PGH/PGMA/Low Density habitat – Private or State surface/federal minerals (SPLIT)	69,826	50,368	0	Same as Alt A	2,665,747	Same as Alt B
Open to leasing subject to standard terms and conditions (i.e., not subject to NSO or CSU stipulations)—BLM surface/federal minerals	5,874,873	3,656,176	1,176,439	3,030,799	Same as Alt B	Same as Alt C
Open to leasing subject to standard terms and conditions (i.e., not subject to NSO, CSU, or TL stipulations)—Private or State surface/federal minerals (SPLIT)	2,639,007	1,183,083	1,152,505	1,175,371	Same as Alt B	Same as Alt B
Open to leasing subject to No Surface Occupancy (NSO)—BLM surface/federal minerals	905,983	600,745	194,813	3,462,624	Same as Alt B	Same as Alt C
Open to leasing subject to No Surface Occupancy (NSO)—Private or State surface/federal minerals (SPLIT)	0	195,855	190,850	325,377	Same as Alt B	Same as Alt B
Open to leasing subject to Controlled Surface Use (CSU)—BLM surface/federal minerals	2,703,012	1,830,163	631,183	2,990,445	Same as Alt B	Same as Alt C
Open to leasing subject to Controlled Surface Use (CSU)—Private or State surface/federal minerals	0	633,127	618,342	668,062	Same as Alt B	Same as Alt B

¹⁰ The mineral split-estate acreage estimates are not based on GIS calculations, as GIS coverage for split estate does not exist. An estimate of Split Estate acreage was completed utilizing ratios to facilitate NEPA analysis. The ratios were derived from factoring applied stipulation/restrictions, or the lack thereof, on GIS-covered BLM surface. These ratios were then applied to lump split-estate acreage within each associated habitat unit (PPMA, PGMA, Not Habitat) for each alternative scenario. This provided the estimate to be used for large scale NEPA analysis. Actual application of stipulations/restrictions, or the lack thereof, to discrete split-estate holdings will need to be completed on the project-level NEPA basis.

Table 2-5
Summary Comparison of Resource Allocations in Greater Sage-Grouse Habitats

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Locatable Minerals, Mineral Materials, and Non-Energy Solid Leasable Minerals (acres)						
BLM Surface/Federal Minerals for Locatable Minerals	Appendix A Figure 2-25	Appendix A Figure 2-26	Appendix A Figure 2-27	Appendix A Figure 2-28	Appendix A Figure 2-29	Appendix A Figure 2-26
Withdrawn from locatable mineral entry	996,760	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A
Recommended for withdrawal from locatable mineral entry	20,453	4,292,266	9,392,412	Same as Alt A	Same as Alt B unless non-habitat	Same as Alt B
Open to locatable mineral exploration or development	11,600,814	7,321,383	2,228,856	Same as Alt A	Same as Alt A	Same as Alt B
BLM Surface/Federal Minerals for Mineral Materials	Appendix A Figure 2-30	Appendix A Figure 2-31	Appendix A Figure 2-32	Appendix A Figure 2-33	Appendix A Figure 2-34	Appendix A Figure 2-31
Closed to mineral materials disposal	2,752,534	6,373,471	10,726,185	Same as Alt B	Same as Alt B unless non-habitat	Same as Alt B
Open for consideration for mineral materials disposal	9,483,868	6,244,557	1,891,843	Same as Alt B	Same as Alt B	Same as Alt B
BLM Surface/Federal Minerals for Non-Energy Solid Leasable Minerals						
Closed to non-energy solid leasable mineral exploration and development ¹¹	3,134,159	6,530,944	10,615,593	Same as Alt A	Same as Alt B	Same as Alt B
Open for consideration of non-energy solid leasable mineral exploration or development ¹²	9,483,868	6,087,084	2,002,435	Same as Alt A	Same as Alt B	Same as Alt B
Private, State, or Other Surface/Federal Minerals (Split-Estate) for Locatable Minerals						
Withdrawn from locatable mineral entry	0	194,534	175,841	Same as Alt A	Same as Alt B	Same as Alt B

¹¹ Taken from GIS data, not Master Title Plats

¹² Taken from GIS data, not Master Title Plats

Table 2-5
Summary Comparison of Resource Allocations in Greater Sage-Grouse Habitats

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Recommended for withdrawal from locatable mineral entry	0	198,164	260,957	Same as Alt A	Same as Alt B	Same as Alt B
Open to locatable mineral exploration or development	2,639,007	2,246,309	2,183,516	Same as Alt A	Same as Alt B	Same as Alt B
Private, State, or Other Surface/Federal Minerals (Split-Estate) for Mineral Materials						
Closed to mineral materials disposal	0	731,979	785,652	Same as Alt B	Same as Alt B	Same as Alt B
Open for consideration for mineral materials disposal	2,639,007	1,907,028	1,853,355	Same as Alt B	Same as Alt B	Same as Alt B
Private, State, or Other Surface/Federal Minerals (Split-Estate) for Non-Energy Solid Leasable Minerals						
Closed to non-energy solid leasable mineral exploration and development	0	626,942	470,197	Same as Alt C	Same as Alt B	Same as Alt B
Open for consideration of non-energy solid leasable mineral exploration or development	2,639,007	2,012,065	2,168,810	Same as Alt C	Same as Alt B	Same as Alt B

Source: Oregon/Washington BLM 2013

Notes:

Acreage calculations are for BLM-administered surface lands, unless otherwise stated, in Burns, Lakeview, Prineville, and Vale districts and do not include the Klamath Falls Resource Area or the John Day and Two Rivers RMP planning areas.

Resource allocations in the RMPs being amended by this RMPA/EIS were not created to directly manage PPH or PGH. This is because these habitat areas were not identified until after the RMPs were adopted. However, resource allocations in the RMPs can still affect PPH and PGH that happen to share the same area as a resource allocation. In these instances, existing RMP resource allocations (which were adopted before the identification of PPH and PGH) influence these recently identified GRSG habitats and the species. Consequently, Alternative A identifies where resource allocations happen to coincide with PPH and PGH. Alternatives B, C, D, and F, contain resource allocations for PPMA and PGMA. Alternative E contains resource allocations for Core Area habitat and Low Density habitat. PPH, PPMA, and Core Area habitat cover the same geographic areas. PGH and PGMA cover the same geographic areas. PGH and PGMA are made up of both Low Density habitat and currently occupied habitat.

Total Acres for each resource include acres in PPH/PPMA/Core Area habitat, PGH/PGMA/Low Density habitat and non-habitat. A non-habitat area acreage is part of each total calculation but is displayed in this table only for GRSG habitat.

Alternative A displays existing habitat as PPH and PGH for comparison purposes only. The BLM is not designating habitat under this alternative.

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Special Status Species – Greater Sage-Grouse				
Action B-SSS 1: Designate PPMA's on 4,547,043 acres (see Table 2-5). Designate PGMA's on 5,662,632 acres (see Table 2-5).	Action C-SSS 1: Same as Alternative B.	Action D-SSS 1: Same as Alternative B.	Action E-SSS 1: Designate Core Areas on 4,547,043 acres (see Table 2-5). Designate Low Density Areas on 3,923,539 acres (see Table 2-5).	Action F-SSS 1: Same as Alternative B.
Action B-SSS 2: Apply a 3% surface disturbance cap to anthropogenic disturbances (not including fire) in PPMA. Once the habitat disturbance cap is exceeded, no additional disturbance would be allowed until the disturbance is below 3%.	Action C-SSS 2: Apply a 0% surface disturbance cap to anthropogenic disturbances (not including fire) in PPMA and PGMA, unless there are valid existing rights.	Action D-SSS 2: Apply a 3% surface disturbance cap to anthropogenic disturbances (not including fire) in PPMA. Mitigation would be mandatory. Once the habitat disturbance cap is exceeded, no additional disturbance would be allowed until the disturbance is below 3%.	Action E-SSS 2: Apply a 0% surface disturbance cap to anthropogenic disturbances (not including fire) in Core Areas, unless non-habitat.	Action F-SSS 2: Apply a 3% surface disturbance cap to anthropogenic disturbances (including fire) in PPMA. Once the habitat disturbance cap is exceeded, no additional disturbance would be allowed until the disturbance is below 3%.
Vegetation (VG) – Habitat Restoration (Also, see Wildland Fire Management section below for other applicable direction.)				
Action B-VG 1: Prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit GRSG (Meinke et al. 2009). Prioritize restoration in seasonal habitats that are thought to be limiting GRSG distribution and abundance.	Action C-VG 1: Same as Alternative B.	Action D-VG 1: Priority locations for restoration projects should be in the Restoration Opportunity Areas. Other considerations include: <ul style="list-style-type: none"> • Sites with a higher probability of success • Seasonal habitats thought to be limiting to GRSG distribution or abundance • PPMA • Connecting corridors between PPMA • PGMA • Following stand-replacing events in sagebrush at least 100 acres in size • Opportunities to improve or restore GRSG habitat *Not in priority order Coordinate restoration activities with adjacent landowners/land managers as opportunities arise.	Action E-VG 1: Sagebrush conversion on BLM-administered lands (e.g., crested wheatgrass seedings) should be avoided if the sole purpose is to increase livestock forage. Alfalfa may provide foraging habitats for GRSG, but typically this occurs at the edge of extensive agricultural areas. A small number of alfalfa fields in an expanse of sagebrush may provide late-season brood habitat. Typically conversion to alfalfa is at the discretion of a private landowner.	Action F-VG 1: Prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit GRSG (Meinke et al. 2009). Prioritize restoration in seasonal habitats that are thought to be limiting sage-grouse distribution and abundance and where factors causing degradation have already been addressed (e.g., changes in livestock management).
Action B-VG 2: Include GRSG habitat parameters as defined by Connelly et al. (2000a), Hagen et al. (2007) or if available, state sage-grouse conservation plans and appropriate local information in habitat	Action C-VG 2: Same as Alternative A.	Action D-VG 2: —	Action E-VG 2: The conservation focus for habitat should include an objective that conserves ≥70% of sage-grouse rangelands that are capable of supporting sagebrush habitats in advanced structural stages,	Action F-VG 2: Include sage-grouse habitat objectives in habitat restoration projects. Make meeting these objectives within occupied sage-grouse habitat the highest restoration priority.

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
restoration objectives. Make meeting these objectives within PPMA the highest restoration priority.			sagebrush class 3, 4 or 5, with an emphasis on classes 4 and 5. The remaining 30% should include areas of juniper encroachment, non-sagebrush shrublands, annual grasslands and non-native perennial grasslands that potentially can be rehabilitated or enhanced. The “70/30” goal is based on a habitat assessment described in BLM Technical Bulletin 417 (Karl and Sadowski 2005).	
Action B-VG 3: —	Action C-VG 3: Make composition, function, and structure of native vegetation communities consistent with the reference state of the appropriate ESD and provide for healthy, resilient, and recovering GRSG habitat components.	Action D-VG 3: Species composition, function, and structure of sagebrush communities should be consistent with ecological site capability.	Action E-VG 3: Current and future land management will need to examine landscape patterns of sagebrush habitat and seek strategies to ensure that large connected patches of sagebrush are present. The implementation of the connectivity model and habitat monitoring techniques suggested in the ODFW plan will help minimize the impacts of habitat loss and fragmentation.	Action F-VG 3: —
Action B-VG 4: —	Action C-VG 4: —	Action D-VG 4: Avoid conducting vegetation management activities during nesting and early brood-rearing where sage-grouse are present (generally within 4 miles of an active lek). Breeding and early brood-rearing typically occur from March through July; use local information to further refine the avoidance period. Timing sensitive vegetation management actions, such as herbicide application or seeding operations for maximum effectiveness is permitted during the local avoidance period.	Action E-VG 4: Minimize disturbance to GRSG populations and do not conduct any vegetation treatments during nesting and early-brood rearing periods when GRSG are present.	Action F-VG 4: —
Action B-VG 5: Require use of native seeds for restoration based on availability, adaptation (ecological site potential), and probability of success (Richards et al. 1998). Where probability of success or adapted seed availability is low, nonnative seeds may be used as long as they support GRSG habitat objectives (Pyke 2011).	Action C-VG 5: Seed local native ecotypes in areas of more intensive disturbance.	Action D-VG 5: Prioritize the use of native plant materials for restoration/rehabilitation based on availability, adaptive capacity, and probability of successful establishment. Where the probability of success or adapted native plant material availability is low, nonnative plant materials may be used as long as they provide the same or very similar ecological functions as native species. Within designated wilderness and wilderness study areas, projects must follow the direction in BLM Manuals 6340 and 6330 for restoration and vegetation management projects.	Action E-VG 5: Encourage the development of native seed sources and the use of native seed by land management entities. Crested wheatgrass may be used (seeded at low rates [1 to 2 pounds per acre]) in conjunction with native plants in rehabilitating disturbance to sagebrush habitats, as an intermediate step in rehabilitating disturbances to sagebrush habitats.	Action F-VG 5: Same as Alternative B.
Action B-VG 6: —	Action C-VG 6: —	Action D-VG 6: When sufficient native plant materials are available, nonnative plant	Action E-VG 6: Crested wheatgrass can be planted (1 to 2 pounds per acre) but	Action F-VG 6: —

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<p>materials should not be used:</p> <ol style="list-style-type: none"> 1. When nonnative species were not present prior to a disturbance or vegetation treatment. 2. In areas not immediately threatened by invasive plant spread or dominance. 3. As forage enhancement. <p>Nonnative plant materials can be used as necessary to:</p> <ol style="list-style-type: none"> 1. Limit or control invasive plant spread or dominance and to create fuel breaks along roads and rights-of-way. 2. Create defensible space in wildland-urban interface settings (within ½ mile of human residences). <p>Seed mixes that include more than 2 pounds per acre of crested/desert wheatgrass shall not be considered “native” even when native plant materials are a majority of the mix.</p>	<p>preferably in a mixture with native species, because it is readily available, can successfully compete with cheatgrass, and establishes itself more readily than natives. The use of crested wheatgrass is an intermediate step in rehabilitating disturbances to sagebrush habitats.</p>	
Action B-VG 7: Design post restoration management to ensure long-term persistence. This could include changes in livestock grazing management, wild horse and burro management and travel management, etc., to achieve and maintain the desired condition of the restoration effort that benefits GRSG (Eiswerth and Shonkwiler 2006).	Action C-VG 7: Same as Alternative A.	Action D-VG 7: Adjust discretionary land uses, such as annual operating plans for livestock grazing, wild horse and burro populations, or recreational uses or seasons, following restoration projects as needed to facilitate achievement of restoration objectives.	Action E-VG 7: Sagebrush conversion on BLM-administered lands (e.g., crested wheatgrass seedings) should be avoided if the sole purpose is to increase livestock forage.	Action F-VG 7: Same as Alternative B.
Action B-VG 8: Consider potential changes in climate (Miller et al. 2011a) when proposing restoration seedings when using native plants. Consider collection from the warmer component of the species current range when selecting native species (Kramer and Havens 2009).	Action C-VG 8: Same as Alternative A.	Action D-VG 8: See Air Quality and Climate Change section.	Action E-VG 8: Resilient sagebrush habitats need to be identified and protected. Use Core Area maps and climate change models to identify those Core Areas that are likely to persist as sagebrush into the future. Identify opportunities to conserve and protect those resilient habitats.	Action F-VG 8: Same as Alternative B.
Action B-VG 9: Restore native (or desirable) plants and create landscape patterns that most benefit GRSG.	Action C-VG 9: Exotic seedings will be rehabbed, interseeded, restored to recover sagebrush in areas to expand occupied habitats.	Action D-VG 9: Use native grass, forb, and shrub species in all restoration actions.	Action E-VG 9: Aggressively treat noxious weeds and other invasive plants where they threaten quality of sage-grouse habitat and apply BMPs to prevent infestations from occurring.	Action F-VG 9: —
Action B-VG 10: Make re-establishment of sagebrush cover and desirable understory plants (relative to ecological site potential) the highest priority for restoration efforts.	Action C-VG 10: Same as Alternative A.	Action D-VG 10: —	Action E-VG 10: —	Action F-VG 10: —

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Action B-VG 11: In fire prone areas where sagebrush seed is required for GRSG habitat restoration, consider establishing seed harvest areas that are managed for seed production (Armstrong 2007) and are a priority for protection from outside disturbances.	Action C-VG 11: Same as Alternative A.	Action D-VG 11: Establish sagebrush seed collection areas to provide locally adapted sagebrush seed sources.	Action E-VG 11: Land managers should encourage development of native seed banks (both in the private and government sectors).	Action F-VG 11: Same as Alternative B.
Action B-VG 12: —	Action C-VG 12: —	<p>Action D-VG 12: Priorities for sagebrush treatment are:</p> <ul style="list-style-type: none"> • Large, contiguous areas of Class 5 sagebrush in Cool-Moist Sagebrush or Class 4 sagebrush in Warm-Dry Sagebrush • Crested/desert wheatgrass seedings • Lower quality brood-rearing habitat • Lower quality nesting habitat • Lower quality connectivity habitat • Sites with minimal presence of invasive species or low probability of colonization by invasive species <p>An individual site may fall into a single priority or in multiple priorities listed. All other sagebrush sites are of lower priority for restoration.</p> <p>All areas should have minimal presence of invasive plant species and low probability of colonization from invasive plant species.</p> <p>Coordinate restoration activities with adjacent landowners/land managers as opportunities arise.</p>	Action E-VG 12: Avoid vegetation treatments in GRSG habitat in areas that are highly susceptible to cheatgrass or other exotic species invasion. Accompany any vegetation treatments conducted in cheatgrass-dominated communities by rehabilitation, and if necessary, reseeding to achieve reestablishment of native vegetation.	Action F-VG 12: —
Action B-VG 13: —	Action C-VG 13: —	Action D-VG 13: Allowable methods for treating sagebrush include mechanical, chemical, biological, or fire methods or combinations of these.	Action E-VG 13: —	Action F-VG 13: —
Action B-VG 14: —	Action C-VG 14: —	Action D-VG 14: —	<p>Action E-VG 14: There is potential for sage-grouse mortality if organophosphorus insecticides are applied to agricultural fields to limit insect damage.</p> <p>Recently similar treatments have been applied to rangelands for grasshopper outbreaks. Such treatments could lead to</p>	Action F-VG 14: —

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
			<p>direct mortality or have indirect effects by removing important foods for chicks.</p> <p>Evaluate necessity of insecticide application.</p> <p>Avoid use of any insecticide in brood-rearing habitats.</p> <p>Avoid use of non-specific insecticides in sage-grouse habitats. Use instar specific insecticides to limit the impacts on other invertebrate species.</p>	
Action B-VG 15: —	Action C-VG 15: —	Action D-VG 15: Sagebrush treatments should produce mosaics of sagebrush structure types consistent with sagebrush type, ecological site capability and disturbance regimes (see also Table 2-2).	<p>Action E-VG 15: Use brush beating (or other appropriate treatment) in strips (or a mosaic pattern) 4 to 16 meters (12 to 50 feet) wide (with untreated interspaces 3 times the width of the treated strips) in areas and with relatively high shrub cover (>25%) to improve herbaceous understory for brood rearing habitats, where such habitats may be limiting. Such treatments should not be conducted in known winter habitat (Dahlgren et al. 2006).</p> <p>Manage a minimum of 70% of GRSG range for sagebrush habitat in advanced structural stages, sagebrush class 3, 4 or 5, with an emphasis on classes 4 and 5. The remaining approximately 30% includes areas of juniper encroachment, non-sagebrush shrubland, and grassland and should be managed to increase available habitat within GRSG range.</p>	Action F-VG 15: —
Action B-VG 16: —	<p>Action C-VG 16: Active restoration practices:</p> <ol style="list-style-type: none"> 1. Removal of livestock water troughs, pipelines, and wells. 2. Where possible, without further damage to springs and water sources, remove waterline piping and maximize water at spring/stream sources supporting diverse riparian and meadow vegetation. 3. Promote natural healing of headcuts to the maximum extent possible by limiting disturbance throughout the watershed. At times, a combination of methods may 	Action D-VG 16: See Livestock Grazing / Range Management section.	<p>Action E-VG 16:</p> <p>Locate and/or relocate livestock water development within sage-grouse habitat to maintain or enhance habitat quality.</p> <p>Spring development should be constructed and/or modified to maintain their free-flowing natural and wet meadow characteristics.</p> <p>Rehabilitate playas, wetlands, and springs that have been hydrologically modified for livestock watering and develop off-site livestock watering facilities.</p>	Action F-VG 16: —

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
	<p>need to be used, but gabions and structural devices and boulder dumping should be limited, and restoration should strive for a functioning system.</p> <p>4. Ripping and recontouring of roads and seeding with native local ecotypes of shrubs and grasses.</p>			
Action B-VG 17: —	<p>Action C-VG 17: Active restoration of crested wheatgrass seedlings. This can be accomplished following targeted restoration planning to expand, reconnect, or recover habitats required by GRSG by:</p> <ol style="list-style-type: none"> 1. Inter-seeding sagebrush seed or seedlings. 2. Removal of crested wheatgrass through plowing while minimizing use of herbicides. Subsequent re-seeding with local native ecotypes. 3. Active restoration of cheatgrass infestation areas. <p>In all cases, local native plant ecotype seeds and seedlings must be used.</p>	Action D-VG 17: When seedlings include nonnative plant materials, evaluate post-planting within 10 years to determine the need for interseeding or interplanting to increase native species populations or compositions to that more representative of the ecological site description and capability.	Action E-VG 17: —	Action F-VG 17: —
Action B-VG 18: —	Action C-VG 18: —	Action D-VG 18: —	Action E-VG 18: Sagebrush conversion on BLM-administered lands (e.g., crested wheatgrass seedlings) should be avoided if the sole purpose is to increase livestock forage. Alfalfa may provide foraging habitats for GRSG, but typically this occurs at the edge of extensive agricultural areas. A small number of alfalfa fields in an expanse of sagebrush may provide late-season brood habitat. Typically conversion to alfalfa is at the discretion of private landowner.	Action F-VG 18: Avoid sagebrush reduction/treatments to increase livestock or big game forage in occupied habitat and include plans to restore high-quality habitat in areas with invasive species.
Action B-VG 19: —	Action C-VG 19: —	Action D-VG 19: —	Action E-VG 19: The use of herbicides (primarily tebuthiuron) at low (0.1 to 0.3 kilogram active ingredient per hectare) application rates may effectively thin sagebrush cover while increasing herbaceous plant production (Olson and Whitson 2002). These treatments should be applied in strips or mosaic patterns. Site conditions must be critically evaluated prior to treatment (including fire rehabilitation, new seedlings and seeding renovations) to increase likelihood of the desired vegetation response.	Action F-VG 19: —

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Action B-VG 20: —	Action C-VG 20: —	Action D-VG 20: —	Action E-VG 20: Promote education and outreach through Soil and Water Conservation District and local Implementation Teams to encourage participation in the NRCS's Sage-Grouse Initiative.	Action F-VG 20: —
Action B-VG 21: —	Action C-VG 21: —	Action D-VG 21: Test new potential restoration methods in areas with a sagebrush overstory and annual grass understory.	Action E-VG 21: —	Action F-VG 21: —
Action B-VG 22: —	Action C-VG 22: —	Action D-VG 22: Priorities for juniper treatments are: <ol style="list-style-type: none"> 1. Phase I and II juniper within PPMA 2. Phase I and II juniper within PGMA 3. Phase III juniper with a grass-forb understory within PPMA 4. Phase III juniper with a grass-forb understory within PGMA <p>Give higher priority to sites with minimal presence of invasive plant species or low probability for colonization by invasive plant species over sites that would also require seeding to control or limit invasive plant species.</p>	Action E-VG 22: Juniper succession stage (Phase I, II, or III) and site conditions should be considered when selecting removal and post-treatment methods.	Action F-VG 22: —
Action B-VG 23: —	Action C-VG 23: —	Action D-VG 23: Consider seeding or other restoration treatments in areas with more than a minimal presence of invasive plant species and low probability of colonization from invasive plant species. Areas with these conditions should have a lower priority than those without.	Action E-VG 23: Same as D-VG 23.	Action F-VG 23: —
Action B-VG 24: —	Action C-VG 24: —	Action D-VG 24: Remove all branches on cut juniper to prevent regrowth and leave no stumps more than four feet above the ground or one foot above the general height of the sagebrush, whichever is shorter, to eliminate remaining perch sites for GRSB predators. Where cut trees would be burned later after drying, do not require limbing.	Action E-VG 24: For Phase I juniper less than 6 feet (2 meters), felling and leaving may be effective. Consider limbing any branches larger than 4 feet (1.5 meters) in height on a felled tree.	Action F-VG 24: —
Action B-VG 25: —	Action C-VG 25: —	Action D-VG 25: Jackpot burning of cut juniper should occur when soils are frozen or snow-covered and moisture content of felled trees is low enough to promote complete or near complete consumption of	Action E-VG 25: For Phase I and Phase II where jackpot burning is the most appropriate method of slash removal, consider a spring burn of juniper (March through April) when soils tend to be frozen	Action F-VG 25: —

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		branches. Leaving the bole portion and larger diameter limbs after burn is acceptable	but the moisture content of the felled trees is low.	
Action B-VG 26: —	Action C-VG 26: —	Action D-VG 26: —	Action E-VG 26: Broadcast burns of juniper-invaded sagebrush should be conducted judiciously and such that only one-third of the treatment area is burned (e.g., not to exceed 160 acres). Once sagebrush has begun to recruit a broadcast burn can be conducted for another one-third of the treatment area, and so on for the final third of the area.	Action F-VG 26: —
Action B-VG 27: —	Action C-VG 27: —	Action D-VG 27: Include restoration seeding where the pre-treatment understory has less than 2 to 5 healthy bunchgrass plants per 10 square feet (i.e., a minimum of 2 plants in all sites and up to 5 plants in low productivity sites).	Action E-VG 27: Seeding prior to juniper treatment should be considered when current perennial grass community is in poor condition (fewer than 2 plants per 10 square feet, less than 1 plant per 10 square feet on dry and wet sites) or if invasive plant species are present. Broadcast seeding prior to soil disturbance or under slash may increase the chances of establishment.	Action F-VG 27: —
Action B-VG 28: —	Action C-VG 28: —	Action D-VG 28: —	Action E-VG 28: Length of rest from grazing following juniper treatment depends on understory composition at time of treatment and response of desirable vegetation following treatment. This typically varies from less than 1 to more than 3 years.	Action F-VG 28: —
Action B-VG 29: —	Action C-VG 29: —	Action D-VG 29: —	Action E-VG 29: If seeding is necessary after wildfire, use appropriate mixtures of sagebrush, native grasses and forbs and appropriate non-native perennials to increase the probability of recovering ecological processes and habitat features of the site.	Action F-VG 29: —
Vegetation (VG) – Integrated Invasive Species				
Action B-VG 30: —	Action C-VG 30: —	Action D-VG 30: —	Action E-VG 30: —	Action F-VG 30: In GRSG habitat, ensure that soil cover and native herbaceous plants are at their ESD potential to help protect against invasive plants. In areas without ESDs, reference sites would be utilized to identify appropriate vegetation communities and soil cover.
Action B-VG 31: —	Action C-VG 31: —	Action D-VG 31: —	Action E-VG 31: Systematic and strategic detection surveys should be developed and conducted in a manner maximizing the likelihood of finding new patches before they	Action F-VG 31: —

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
			expand. Once patches are located, seed production should be stopped and the weeds should be eradicated. The most effective tools for eradication of many weeds are herbicides and possibly bio-controls.	
Action B-VG 32: —	Action C-VG 32: —	Action D-VG 32: In general, treatment priorities* should be: <ol style="list-style-type: none"> 1. New infestations 2. Satellite populations 3. Isolated populations 4. Invasive species still subdominant 5. Edges of large infestations 6. Sites frequently or commonly used for temporary infrastructure such as incident base camps, spike camps, staging areas, helispots, and so forth. *Not in priority order	Action E-VG 32: Areas with an adequate understory (greater than 20% composition) of desired vegetation should be identified and prioritized as high for control since they have higher likelihood of successful rehabilitation than areas where desired species are completely displaced.	Action F-VG 32: —
Action B-VG 33: —	Action C-VG 33: —	Action D-VG 33: Allowable methods of invasive plant control include mechanical, chemical, biological, or prescribed fire methods or combinations of these methods.	Action E-VG 33: —	Action F-VG 33: —
Action B-VG 34: —	Action C-VG 34: —	Action D-VG 34: —	Action E-VG 34: Weed Prevention Areas (VPAs) should be established in areas with limited infestation. Spread vector analysis should be used to determine the highest probability spread mechanisms. “Invasive Plant Prevention Guidelines” developed by the Center for Invasive Plant Management should be followed to reduce the risk of spreading invasive noxious weeds into sagebrush communities.	Action F-VG 34: —
Action B-VG 35: —	Action C-VG 35: —	Action D-VG 35: Use of approved herbicides, biocides, and bio-controls is allowed on all land allocations currently providing or reasonably expected to provide GRSG habitat. Same as Alternative A.	Action E-VG 35: Containment programs for large infestations should be maintained. Border spraying infestations, planting aggressive (even appropriate nonnative species) plants as a barrier, establishing seed feeding biological control agents, and grazing weeds to minimize seed production are all methods that could help contain large infestations.	Action F-VG 35: —
Action B-VG 36: —	Action C-VG 36: —	Action D-VG 36: —	Action E-VG 36: A rehabilitation and restoration plan should be developed and implemented for areas with inadequate	Action F-VG 36: —

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
			understory (less than 20% composition) of desired vegetation. The species of choice should include these with similar niche as the invasive weeds. The goal should be to maximize niche occupation with desired species.	
Action B-VG 37: —	Action C-VG 37: —	Action D-VG 37: —	Action E-VG 37: Work with various agencies and the courts to remove herbicide injunction.	Action F-VG 37: —
Action B-VG 38: —	Action C-VG 38: —	Action D-VG 38: On Type III through I wildfires, provide and require the use of weed washing stations and acceptable disposal of subsequent waste water and material that minimizes the risk of further spread. All vehicles and equipment arriving from outside the local area should be washed before initial use in the fire area and during post-fire emergency stabilization and rehabilitation operations. All vehicles and equipment should be washed prior to release from the incident to reduce the probability of transporting invasive plants to other locations.	Action E-VG 38: —	Action F-VG 38: —
Action B-VG 39: —	Action C-VG 39: —	Action D-VG 39: Wash vehicles and equipment used in field operations prior to use in areas without known infestations of invasive plants. Wash vehicles and equipment used in areas with known infestations prior to use in another area to limit the further spread of invasive species.	Action E-VG 39: —	Action F-VG 39: —
Action B-VG 40: —	Action C-VG 40: —	Action D-VG 40: Locate base camps, spike camps, coyote camps or other temporary infrastructure in areas that lack invasive plant populations. Where no such options are available, provide for post-operation invasive plant treatments.	Action E-VG 40: —	Action F-VG 40: —
Action B-VG 41: —	Action C-VG 41: —	Action D-VG 41: Minimize cross-country vehicle travel through invasive plant infested areas during emergency and planned operations, such as during wildfire response; spot applying herbicides to invasive plants, conducting vegetation inventory, and so forth.	Action E-VG 41: —	Action F-VG 41: —
Action B-VG 42: —	Action C-VG 42: —	Action D-VG 42: —	Action E-VG 42: Aggressively treat noxious weeds and other invasive plants where they threaten quality of GRSG	Action F-VG 42: —

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
			habitat, and apply best management practices to prevent infestations from occurring.	
Action B-VG 43: Same as Alternative D.	Action C-VG 43: Same as Alternative D.	Action D-VG 43: Integrated Vegetation Management would be used to control, suppress, and eradicate, where possible, noxious and invasive species per BLM Handbook H-1740-2. Apply Ecologically Based Invasive Plant Management principles in developing responses to noxious and invasive plant species.	Action E-VG 43: Same as Alternative D.	Action F-VG 43: Same as Alternative D.
Wild Horse and Burro (WHB)				
Action B-WHB 1: Within PPMA, develop or amend BLM Herd Management Area Plans (HMAPs) to incorporate GRSG habitat objectives and management considerations for all BLM herd management areas (HMAs).	Action C-WHB 1: Same as Alternative A.	Action D-WHB 1: Within PPMA review existing Herd Management Area Plans (HMAPs) to incorporate GRSG habitat objectives and management considerations for all BLM Herd Management Areas (HMAs).	Action E-WHB 1: —	Action F-WHB 1: Same as Alternative B.
Action B-WHB 2: For all BLM HMAs within PPMA, prioritize the evaluation of all AMLs based on indicators that address structure, condition, and composition of vegetation and measurements specific to achieving GRSG habitat objectives.	Action C-WHB 2: Same as Alternative A.	<p>Action D-WHB 2: For all HMAs within PPMA, an interdisciplinary team would prioritize the evaluation of all AMLs based on indicators that address structure, condition, and composition of vegetation and measurements specific to achieving GRSG habitat objectives that attain suitable habitat assessment framework (HAF) rating. The priorities for conducting evaluations are:</p> <ol style="list-style-type: none"> 1. The portions of the HMA in PPMA 2. The portions of the HMA in PGMA 3. All other areas <p>Modify the AML based on rangeland health analysis and monitoring data if GRSG habitat objectives are not being met.</p> <p>Funding priorities are established nationally and subject to change due to escalating issues or emergencies. The priorities for gathers are:</p> <ol style="list-style-type: none"> 1. PPMA 2. PGMA 3. All other areas <p>Gathers can be conducted in priority 2 and 3 areas ahead of PPMA to prevent impacts on rangeland health, including herd health</p>	<p>Action E-WHB 2: The cumulative Appropriate Management Level (AML) for horse numbers should be kept within current AML (1,351 to 2,650) in herd management areas.</p> <p>Management agencies are strongly encouraged to prioritize funding for wild horse round-ups in GRSG areas that are over AML.</p> <p>Evaluate the AMLs for impacts on sagebrush habitat.</p> <p>Further measures may be warranted to conserve GRSG habitat even if horses are at, above, or below the AML for an HMA.</p>	Action F-WHB 2: Associated with the reduction in livestock grazing, reduce wild horse AML by 25% for herd management areas that contain PPMA and PGMA to reduce grazing pressure on vegetation.

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		impacts. Modify the AML based on rangeland health analysis and monitoring data if GRSG habitat objectives are not being met.		
Action B-WHB 3: Coordinate with other resources (Range, Wildlife, and Riparian) to conduct land health assessments to determine existing structure, condition, and composition of vegetation within all BLM HMAs.	Action C-WHB 3: Same as Alternative A.	Action D-WHB 3: —	Action E-WHB 3: —	Action F-WHB 3: Same as Alternative B.
Action B-WHB 4: When conducting NEPA analysis for wild horse and burro management activities, water developments or other rangeland improvements for wild horses in PPMA, address the direct and indirect effects on GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock identified above in PPMA.	Action C-WHB 4: Same as Alternative A.	Action D-WHB 4: —	Action E-WHB 4: —	Action F-WHB 4: Same as Alternative B.
Wildland Fire Management (WFM) (Also, see Vegetation section above for other applicable direction.)				
Action B-WFM I: In PPMA, design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems. 1. Do not reduce sagebrush canopy cover to less than 15% (Connelly et al. 2000a; Hagen et al. 2007) unless a fuels management objective requires additional reduction in sagebrush cover to meet strategic protection of PPMA and conserve habitat quality for the species. Closely evaluate the benefits of the fuel break against the additional loss of sagebrush cover in future NEPA documents. 2. Apply appropriate seasonal restrictions for implementing fuels management treatments according to the type of seasonal habitats present in a PPMA. 3. Allow no fuels treatments in known winter range unless the treatments are designed to strategically reduce wildfire risk around or in the winter range and	Action C-WFM I: Same as Alternative B.	Action D-WFM I: Fuel management actions are detailed below and in Appendix H , Greater Sage-Grouse Wildland Fire and Invasive Species Assessment. Develop a system of fuel breaks to protect larger intact blocks of sage-grouse habitat. When possible, locate these fuel breaks along existing roads and rights-of-way. Treat GRSG habitat to reduce the probability of large homogeneous burn patterns and unacceptable wildfire effects, to limit juniper encroachment, and to control invasive species. Treatment assessment should include evaluation of acceptable wildfire effects and recovery and use of unplanned naturally ignited fires. Complete an interagency landscape-scale assessment to prioritize at-risk habitats and identify fuels management, preparedness,	Action E-WFM I: Preventing fire from entering at-risk communities (e.g., cheatgrass in understory/overstory sagebrush) should be a high priority for protecting GRSG habitat.	Action F-WFM I: Design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems. 1. Do not reduce sagebrush canopy cover to less than 15% (Connelly et al. 2000a; Hagen et al. 2007) unless a fuels management objective requires additional reduction in sagebrush cover to meet strategic protection of occupied GRSG habitat and conserve habitat quality for the species. 2. Closely evaluate the benefits of the fuel break against the additional loss of sagebrush cover in the EA process. 3. Apply appropriate seasonal restrictions for implementing fuels management treatments according to the type of seasonal habitats present. 4. Allow no fuels treatments in known winter range unless the treatments are designed to strategically reduce wildfire risk around or in the winter range and

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
<p>would maintain winter range habitat quality.</p> <p>4. Do not use fire to treat sagebrush in less than 12-inch precipitation zones (e.g., Wyoming big sagebrush or other xeric sagebrush species; Connelly et al. 2000a; Hagen et al. 2007; Beck et al. 2009). However, if as a last resort and after all other treatment opportunities have been explored and site specific variables allow, the use of prescribed fire for fuel breaks that would disrupt the fuel continuity across the landscape could be considered, in stands where cheatgrass is a very minor component in the understory (Brown 1982).</p> <p>5. Monitor and control invasive vegetation post-treatment.</p> <p>6. Rest treated areas from grazing for two full growing seasons unless vegetation recovery dictates otherwise (WGFD 2011).</p> <p>7. Require use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, nonnative seeds may be used as long as they meet GRSG habitat objectives (Pyke 2011).</p> <p>8. Design post fuels management projects to ensure long-term persistence of seeded or pre-treatment native plants. This may require temporary or long-term changes in livestock grazing management, wild horse and burro management, travel management, or other activities to achieve and maintain the desired condition of the fuels management project (Eiswerth and Shonkwiler 2006).</p>		<p>suppression, and restoration priorities.</p> <p>See Vegetation section for desired outcomes and conditions post-treatment.</p>		<p>would maintain winter range habitat quality.</p> <p>5. Do not use fire to treat sagebrush in less than 12-inch precipitation zones (e.g., Wyoming big sagebrush or other xeric sagebrush species; Connelly et al. 2000a; Hagen et al. 2007; Beck et al. 2009). However, if as a last resort and after all other treatment opportunities have been explored and site specific variables allow, the use of prescribed fire for fuel breaks that would disrupt the fuel continuity across the landscape could be considered, in stands where cheatgrass is a very minor component in the understory (Brown 1982).</p> <p>6. Design post fuels management projects to ensure long-term persistence of seeded or pre-treatment native plants, including sagebrush. This may require temporary or long-term changes in livestock grazing management, wild horse and burro management, travel management, or other activities to achieve and maintain the desired condition of the fuels management project (Eiswerth and Shonkwiler 2006).</p>
Action B-WFM 2: —	Action C-WFM 2: —	Action D-WFM 2: See Vegetation section above for allowable treatment methods and desired outcomes.	Action E-WFM 2: Burns should be conducted in such a way that there is a mosaic of sagebrush and burned areas. These	Action F-WFM 2: —

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
			treatments should occur at higher elevations (in the absence of cheatgrass) near juniper encroachment areas. Remove juniper encroaching from mountain big sagebrush communities through cutting of juniper and burning piled trees and limbs (“jack-pot burning”). Prescribed fires at lower elevations generally should be avoided as a management tool. This tool should be used only when: <ol style="list-style-type: none"> 1. No other options are available 2. A pre-burn evaluation has determined that the risk of cheatgrass or other invasive weeds is minimal 	
Action B-WFM 3: —	Action C-WFM 3: Manage lands to be in the good or better ecological condition to help minimize adverse impacts of fire.	Action D-WFM 3: —	Action E-WFM 3: —	Action F-WFM 3: —
Action B-WFM 4: —	Action C-WFM 4: Focus any fuels treatments on interfaces with human habitation or significant existing disturbances.	Action D-WFM 4: —	Action E-WFM 4: —	Action F-WFM 4: —
Action B-WFM 5: Design fuels management projects in PPMA to strategically and effectively reduce wildfire threats in the greatest area. This may require fuels treatments implemented in a more linear versus block design (Launchbaugh et al. 2007).	Action C-WFM 5: Same as Alternative A.	Action D-WFM 5: See Vegetation section for desired outcomes.	Action E-WFM 5: —	Action F-WFM 5: —
Action B-WFM 6: During fuels management project design, consider the utility of using livestock to strategically reduce fine fuels (Diamond et al. 2009), and implement grazing management that accomplishes this objective (Davies et al. 2011; Launchbaugh et al. 2007). Consult with ecologists to minimize impacts on native perennial grasses.	Action C-WFM 6: Same as Alternative A.	Action D-WFM 6: See Vegetation section for allowable treatment methods.	Action E-WFM 6: —	Action F-WFM 6: —
Action B-WFM 7: In PPMA, prioritize suppression, immediately after life and property, to conserve the habitat.	Action C-WFM 7: Same as Alternative A.	Action D-WFM 7: Same as Alternative B, in PPMA, prioritize suppression, immediately after life and property, to conserve the habitat. GRSG habitat protection is a high priority for the fire management program. A full range of fire management activities and options would be utilized to protect GRSG habitat within acceptable risk levels. Local	Action E-WFM 7: Give wildfire suppression priority to known GRSG habitat within the framework of the Federal Wildland Fire Management Policy (human life and safety as the first priority, with property and natural resources as second priorities; DOI and USDA 1995).	Action F-WFM 7: Same as Alternative B.

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Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		agency administrators, resource advisors, and partner agencies would convey protection priorities for GRSG and their habitat to Incident Commanders.		
Action B-WFM 8: In PGMA, prioritize suppression where wildfires threaten PPMA.	Action C-WFM 8: Same as Alternative A.	Action D-WFM 8: Within GRSG habitat (PPMA and PGMA), prioritize protection as follows: <ol style="list-style-type: none"> 1. Nesting habitat within 3 miles of a lek 2. Sage-grouse winter range 3. PPMA <p>Incorporate locations of priority GRSG protection areas into the dispatch system.</p> <p>Provide local GRSG habitat maps to dispatch offices and initial attack Incident Commanders for use in prioritizing wildfire suppression resources and designing suppression tactics.</p>	Action E-WFM 8: Land within 3 miles (5 kilometers) of a lek, as well as identified winter range, should be given top priority in fire suppression. Judiciously use heavy equipment and limit brush removal to only the level necessary to expeditiously extinguish the fire.	Action F-WFM 8: —
Action B-WFM 9: —	Action C-WFM 9: —	Action D-WFM 9: Retain unburned areas, including interior islands and patches between roads and the fire perimeter, of sagebrush unless there is a compelling safety, resource protection, or wildfire management objective at risk.	Action E-WFM 9: Retain unburned areas (including interior islands and patches between roads and the fire perimeter) of GRSG habitat unless there is a compelling safety, resource protection, or control objectives at risk.	Action F-WFM 9: —
Action B-WFM 10: —	Action C-WFM 10: —	Action D-WFM 10: Follow established direction in the current Interagency Standards for Fire Operations (Red Book) with respect to use of resource advisors, annual review of fire management plans for updates relevant to GRSG habitat, contents of the Delegation of Authority letters, and so forth.	Action E-WFM 10: Train and use resource advisors to assist with prioritizing fires during suppression activities and work with Incident Commanders and Incident Management Teams as appropriate. <p>Fire specialists and wildlife biologists should review District Fire Management Plans (Phase I) annually to incorporate new GRSG information (e.g., lek and habitat viability maps) in setting wildfire suppression priorities. Updates to Phase-I Fire Plans should be distributed to dispatchers for initial attack planning.</p>	Action F-WFM 10: —
Action B-WFM 11: —	Action C-WFM 11: —	Action D-WFM 11: —	Action E-WFM 11: Use direct attack tactics when it is safe and effective at reducing amount of burned habitat.	Action F-WFM 11: —
Action B-WFM 12: —	Action C-WFM 12: —	Action D-WFM 12: Use of retardant and other fire suppressant chemicals is allowed on all land allocations except where expressly prohibited by land allocation	Action E-WFM 12: —	Action F-WFM 12: —

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		direction. Use of retardant is allowed on all land allocations regardless of management direction when there is imminent threat to human life (entrapment).		
Action B-WFM 13: —	Action C-WFM 13: —	Action D-WFM 13: Use of mechanical fire line is allowed except where prohibited by other resource direction (e.g., Soils, Hydrology, and Riparian management) and where inconsistent with direction for specific land allocations without approval of the District Manager.	Action E-WFM 13: —	Action F-WFM 13: —
Action B-WFM 14: —	Action C-WFM 14: —	Action D-WFM 14: Use of naturally ignited wildfires is allowed to meet resource management objectives such as reducing juniper encroachment and creating mosaics of sagebrush classes. Include decision criteria in the fire management plan for determining when use of a naturally ignited wildfire is appropriate.	Action E-WFM 14: —	Action F-WFM 14: —
Action B-WFM 15: —	Action C-WFM 15: —	Action D-WFM 15: To the extent feasible, locate base camps, spike camps, drop points, staging areas, helibases, and other temporary wildfire infrastructure in areas where physical disturbance to GRSG habitat can be minimized.	Action E-WFM 15: —	Action F-WFM 15: —
Action B-WFM 16: Require BMPs in NTT Report, Appendix F (BMPs for Fire and Fuels) (Appendix C , Required Design Features for Alternatives B, C, D, and F).	Action C-WFM 16: Same as Alternative B.	Action D-WFM 16: Same as Alternative B.	Action E-WFM 16: —	Action F-WFM 16: Same as Alternative B.
Action B-WFM 17: Prioritize native seed allocation for use in GRSG habitat in years when preferred native seed is in short supply. This may require reallocation of native seed from Emergency Stabilization and Rehabilitation (ES&R) projects outside of PPMA to those inside it. Use of native plant seeds for ES&R seedings is required based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, nonnative seeds may be used as long as they meet GRSG habitat conservation objectives (Pyke 2011). Re-establishment of appropriate sagebrush species/subspecies and important understory plants, relative to site potential, shall be the	Action C-WFM 17: Same as Alternative A.	Action D-WFM 17: Evaluate wildfires of approximately 100 acres and larger for rehabilitation needs to restore functioning sagebrush ecosystems, limit water and wind erosion, and limit the spread of invasive plant species. Determine the need for: <ol style="list-style-type: none"> 1. Increased plant cover relative to ecological site capability 2. Invasive species control needs 3. Wind or water erosion control needs 4. Increased abundance of native species to meet GRSG habitat needs 	Action E-WFM 17: Wildfires burning greater than 10 acres of GRSG habitat should be evaluated to determine if seeding is necessary to recover ecological processes and achieve habitat objectives. If seeding is necessary, managers should use appropriate mixtures of sagebrush, native grasses and forbs, and appropriate nonnative perennials that increase the probability of recovering ecological processes and habitat features of the site. Wyoming big sagebrush sites should be re-seeded or planted with seedlings of Wyoming big sagebrush when available. Wildfires burning greater than 10 acres of habitat that is at high risk of invasive plant invasions should be seeded with an appropriate mixture to reduce the	Action F-WFM 17: Same as Alternative B.

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
highest priority for rehabilitation efforts.			probability of cheatgrass establishment.	
Action B-WFM 18: —	Action C-WFM 18: —	Action D-WFM 18: See Vegetation section for direction concerning emergency stabilization and rehabilitation.	Action E-WFM 18: —	Action F-WFM 18: —
Action B-WFM 19: —	Action C-WFM 19: —	Action D-WFM 19: See Vegetation section for direction concerning seed mixes.	Action E-WFM 19: If native plant and sagebrush seed is unavailable crested wheatgrass can be planted in lieu of native species or as a mixture with native species, because it is readily available, can successfully compete with cheatgrass, and establishes itself more readily than natives. If crested wheatgrass is planted initially specific efforts or plans are needed to interseed native grasses, forbs and shrubs in the rehabilitation area. This might include an initial seed-mix of 1 to 2 pounds per acre of crested wheatgrass mixed with natives. Use of crested wheatgrass is an intermediate step in rehabilitating disturbances to sagebrush habitats.	Action F-WFM 19: —
Action B-WFM 20: —	Action C-WFM 20: —	Action D-WFM 20: See Vegetation section for direction concerning seed mixes.	Action E-WFM 20: Sagebrush should be included in fire rehabilitation seeding mixtures or as seedlings as often as possible.	Action F-WFM 20: —
Action B-WFM 21: —	Action C-WFM 21: —	Action D-WFM 21: —	Action E-WFM 21: Decrease the probability of cheatgrass invasion after a fire.	Action F-WFM 21: —
Action B-WFM 22: —	Action C-WFM 22: —	Action D-WFM 22: Upon completion of fuels, restoration or rehabilitation projects, monitor to ensure long-term success, including persistence of seeded species and other treatment components.	Action E-WFM 22: Post-treatment monitoring would be needed to determine if rehabilitation efforts need to be repeated if initial attempts fail due to drought.	Action F-WFM 22: —
Action B-WFM 23: Design post ES&R management to ensure long-term persistence of seeded or pre-burn native plants. This may require temporary or long-term changes in livestock grazing, wild horse and burro, and travel management, etc., to achieve and maintain the desired condition of ES&R projects to benefit GRSG (Eiswerth and Shonkwiler 2006).	Action C-WFM 23: Same as Alternative A.	Action D-WFM 23: —	Action E-WFM 23: —	Action F-WFM 23: Same as Alternative B.
Action B-WFM 24: Consider potential changes in climate (Miller et al. 2011a) when proposing post-fire seedings using native plants. Consider seed collections from the warmer component within a species' current range for selection of native seed. (Kramer and Havens 2009).	Action C-WFM 24: Same as Alternative A.	Action D-WFM 24: See Air Quality and Climate Change section.	Action E-WFM 24: —	Action F-WFM 24: Same as Alternative B.

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Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Action B-WFM 25: —	Action C-WFM 25: —	Action D-WFM 25: —	Action E-WFM 25: Land managers should encourage development of native seed banks (both in the private and government sectors).	Action F-WFM 25: Establish and strengthen networks with seed growers to assure availability of native seed for ES&R projects.
Action B-WFM 26: —	Action C-WFM 26: —	Action D-WFM 26: See Livestock Grazing / Range Management section.	Action E-WFM 26: —	Action F-WFM 26: Post fire recovery must include establishing adequately sized exclosures (free of livestock grazing) that can be used to assess recovery.
Action B-WFM 27: —	Action C-WFM 27: —	Action D-WFM 27: See Livestock Grazing / Range Management section.	Action E-WFM 27: —	Action F-WFM 27: Livestock grazing should be excluded from burned areas until woody and herbaceous plants achieve GRSG habitat objectives.
Action B-WFM 28: —	Action C-WFM 28: —	Action D-WFM 28: See Livestock Grazing / Range Management section.	Action E-WFM 28: —	Action F-WFM 28: Where burned GRSG habitat cannot be fenced from other unburned habitat, the entire area (e.g., allotment/pasture) should be closed to grazing until recovered.
Action B-WFM 29: —	Action C-WFM 29: Use grass mowing in any fuel break fuels-reduction project (roadsides or other areas).	Action D-WFM 29: Develop a system of fuel breaks to protect larger intact blocks of GRSG habitat. Where possible, locate these fuel breaks along existing roads and rights-of-way. Within GRSG habitat, prioritize suppression and fuels management activities based on an assessment of the quality of habitat at risk.	Action E-WFM 29: Consider establishing fire breaks or green-stripping along existing roadways to provide a fuel break and safe zone from which to fight fire. Establish green strips no larger than 50 feet (15 meters) on either side of the road to provide foraging habitat for sage-grouse and provide more than 100 feet (30 meters) of fuel breaks. Consider planting crested wheat in fuel breaks where invasive plant species are prevalent (see guideline on fire restoration for seeding rate).	Action F-WFM 29: —
Action B-WFM 30: —	Action C-WFM 30: —	Action D-WFM 30: Reduce hazardous fuels created through other vegetation treatments, such as establishment or maintenance of roads, trails, or rights-of-way, within 3 years of its creation. The reduction should be sufficient to limit fire spread or unacceptable fire behavior or fire effects in sagebrush ecosystems.	Action E-WFM 30: —	Action F-WFM 30: —
Action B-WFM 31: —	Action C-WFM 31: —	Action D-WFM 31: Use interagency-coordinated fire restrictions and public service announcements to reduce the number of human starts in or near sage-grouse habitat during periods of increased and elevated fire danger.	Action E-WFM 31: —	Action F-WFM 31: —
Action B-WFM 32: —	Action C-WFM 32: —	Action D-WFM 32: BLM districts, in coordination with USFWS and relevant state agencies, would complete and continue to	Action E-WFM 32: —	Action F-WFM 32: —

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Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		update GRSG Landscape Wildfire & Invasive Species Habitat Assessments by December 2014 to prioritize at-risk habitats, and identify fuels management, preparedness, suppression, and restoration priorities necessary to maintain sagebrush habitat to support interconnecting GRSG populations. These assessments and subsequent assessment updates would be a coordinated effort with an interdisciplinary team to take into account other GRSG priorities identified in this plan. Appendix H , Greater Sage-Grouse Wildland Fire and Invasive Species Assessment, describes a minimal framework example and suggested approach for this assessment.		
Action B-WFM 33: —	Action C-WFM 33: —	Action D-WFM 33: Implementation actions would be tiered to the local unit level GRSG Landscape Wildfire and Invasive Species Assessment described in Action D-WFM 32, utilizing best available science related to the conservation of GRSG.	Action E-WFM 33: —	Action F-WFM 33: —
Action B-WFM 34: —	Action C-WFM 34: —	Action D-WFM 34: In coordination with USFWS and relevant state agencies, BLM districts would identify annual treatment needs for wildfire and invasive species management as identified in local unit level Landscape Wildfire and Invasive Species Assessments. Coordinate annual treatment needs across state/regional scales and across jurisdictional boundaries for long-term conservation of GRSG.	Action E-WFM 34: —	Action F-WFM 34: —
Action B-WFM 35: —	Action C-WFM 35: —	Action C-WFM 35: Annually complete a review of landscape assessment implementation efforts with appropriate USFWS and state agency personnel.	Action C-WFM 35: —	Action C-WFM 35: —
Action B-WFM 36: Fuels Management: Implement as RDFs the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.	Action C-WFM 36: Fuels Management: Implement as RDFs the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.	Action D-WFM 36: Fuels Management: Implement as “required design features”, the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.	Action E-WFM 36:	Action F-WFM 36: Fuels Management: Implement as RDFs the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.
Action B-WFM 37: —	Action C-WFM 37: —	Action D-WFM 37: Fuel treatments would be designed though an interdisciplinary process to expand, enhance, maintain, and protect GRSG habitat. Use green strips and/or fuel breaks, where appropriate, to	Action E-WFM 37: —	Action F-WFM 37: —

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<p>protect seeding efforts from subsequent fire events.</p> <p>In coordination with USFWS and relevant state agencies, BLM districts with large blocks of sage-grouse habitat would develop, using the assessment process described in Appendix H, Greater Sage-Grouse Wildland Fire and Invasive Species Assessment, a fuels management strategy that considers an up-to-date fuels profile, LUP direction, current and potential habitat fragmentation, sagebrush and sage-grouse ecological factors, and active vegetation management steps to provide critical breaks in fuel continuity, where appropriate by December 2014. When developing this strategy, planning units would consider the risk of increased habitat fragmentation from a proposed action versus the risk of large scale fragmentation posed by wildfires if the action is not taken.</p>		
Action B-WFM 38: —	Action C-WFM 38: —	Action D-WFM 38: Utilizing an interdisciplinary approach, a full range of fuel reduction techniques would be available. Fuel reduction techniques such as grazing, prescribed fire, chemical, biological and mechanical treatments are acceptable.	Action E-WFM 38: —	Action F-WFM 38: —
Action B-WFM 39: —	Action C-WFM 39: —	Action D-WFM 39: Prioritize the use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success. Where probability of success or native seed availability is low, non-native seeds may be used to meet GRSG habitat objectives to trend toward restoring the fire regime. When reseeding, use fire resistant native and non-native species, as appropriate, to provide for fuel breaks.	Action E-WFM 39: —	Action F-WFM 39: —
Action B-WFM 40: —	Action C-WFM 40: —	Action D-WFM 40: Upon project completion, monitor and manage fuels projects to ensure long-term success, including persistence of seeded species and/or other treatment components. Control invasive vegetation post-treatment.	Action E-WFM 40: —	Action F-WFM 40: —

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Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Action B-WFM 41: —	Action C-WFM 41: —	Action D-WFM 41: Apply seasonal restriction, as needed, for implementing fuels management treatments according to the type of seasonal habitat present.	Action E-WFM 41: —	Action F-WFM 41: —
Action B-WFM 42: Preparedness: Implement as RDFs, the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.	Action C-WFM 42: Preparedness: Implement as RDFs, the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.	Action D-WFM 42: Preparedness: Implement as RDFs, the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.	Action E-WFM 42: Preparedness: Implement as RDFs, the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.	Action F-WFM 42: Preparedness: Implement as RDFs, the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.
Action B-WFM 43: —	Action C-WFM 43: —	Action D-WFM 43: Implement a coordinated interagency approach to fire restrictions based upon National Fire Danger Rating System thresholds (fuel conditions, drought conditions and predicted weather patterns) for GRSG habitat.	Action E-WFM 43: —	Action F-WFM 43: —
Action B-WFM 44: —	Action C-WFM 44: —	Action D-WFM 44: Develop wildfire prevention plans that explain the resource value of sage-grouse habitat and include fire prevention messages and actions to reduce human-caused ignitions.	Action E-WFM 44: —	Action F-WFM 44: —
Action B-WFM 45: Fire Management (Suppression): Implement as RDFs, the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.	Action C-WFM 45: Fire Management (Suppression): Implement as RDFs, the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.	Action D-WFM 45: Fire Management (Suppression): Implement as RDFs, the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.	Action E-WFM 45: Fire Management (Suppression): Implement as RDFs, the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.	Action F-WFM 45: Fire Management (Suppression): Implement as RDFs, the measures identified in Appendix C , Required Design Features for Alternatives B, C, D, and F.
Action B-WFM 46: Same as Alternative D.	Action C-WFM 46: Same as Alternative D.	Action D-WFM 46: Fire fighter and public safety are the highest priority. Sage-grouse habitat would be prioritized commensurate with property values and other critical habitat to be protected, with the goal to restore, enhance, and maintain areas suitable for sage-grouse.	Action E-WFM 46: Same as Alternative D.	Action F-WFM 46: Same as Alternative D.
Action B-WFM 47: —	Action C-WFM 47: —	Action D-WFM 47: Within sage-grouse habitat, PPMA (and PACs, if so determined by individual RMP efforts) are the highest priority for conservation and protection during fire operations and fuels management decision making. The PPMA (and PACs, if so determined by individual RMP efforts) would be viewed as more valuable than PGMA when priorities are established. When suppression resources are widely available, maximum efforts would be placed on limiting fire growth in PGMA polygons as well. These priority areas would be further refined following completion of the GRSG Landscape Wildfire and Invasive Species	Action E-WFM 47: —	Action F-WFM 47: —

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		Habitat Assessments described in Appendix H , Greater Sage-Grouse Wildland Fire and Invasive Species Assessment.		
Action B-WFM 48: —	Action C-WFM 48: —	Action D-WFM 48: Within acceptable risk levels, utilize a full range of fire management strategies and tactics, including the management of wildfires to achieve resource objectives, across the range of sage-grouse habitat consistent with land use plan direction.	Action E-WFM 48: —	Action F-WFM 48: —
Livestock Grazing/Range Management (LG/RM)				
Action B-LG/RM 1: The number of AUMs would be the same as Alternative A. There would be 924,617 AUMs.	Action C-LG/RM 1: Prohibit grazing in occupied GRSG habitat. There would be 0 AUMs.	<p>Action D-LG/RM 1: Close all RNAs that contain over 20% PPMA acres and/or 50% PGMA that are not meeting rangeland health standards and do not have a suitable habitat rating consistent with the HAF or with values adjusted for regional conditions to maintain native plant community cells in relatively undisturbed condition to serve as a baseline for understanding the impacts of grazing and not grazing sage-grouse habitat.</p> <p>Maintain closed RNAs as closed until attainment of rangeland health standards can be documented and a suitable habitat rating that is consistent with the HAF or with values adjusted for regional conditions is achieved.</p> <p>There would be 915,624 AUMs.</p>	Action E-LG/RM 1: The number of AUMs would be the same as Alternative A. There would be 924,617 AUMs.	Action F-LG/RM 1: Reduce by 25% the area grazed. There would be 350,208 AUMs.
Action B-LG/RM 2: Within PPMA, incorporate GRSG habitat objectives and management considerations into all BLM grazing allotments through Allotment Management Plans (AMPs) or permit renewals.	Action C-LG/RM 2: —	<p>Action D-LG/RM 2: When renewing term grazing permits or leases and revising or drafting new allotment management plans within GRSG PPMA, incorporate habitat indicators and associated values that are consistent with the HAF or with values adjusted for regional conditions, into management objectives and actions</p> <p>The timing and location of livestock turnout and trailing should not contribute to livestock concentrations on leks during the GRSG breeding season.</p>	Action E-LG/RM 2: —	Action F-LG/RM 2: Same as Alternative B.
Action B-LG/RM 3: In PPMA, work cooperatively on integrated ranch planning	Action C-LG/RM 3: —	Action D-LG/RM 3: Same as Alternative A.	Action E-LG/RM 3: —	Action F-LG/RM 3: Same as Alternative B.

Table 2-6
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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
within GRSG habitat so operations with deeded BLM allotments can be planned as single units.				
Action B-LG/RM 4: Prioritize completion of land health assessments and processing grazing permits within PPMA. Focus this process on allotments that have the best opportunities for conserving, enhancing or restoring habitat for GRSG. Utilize BLM Ecological Site Descriptions (ESDs) to conduct land health assessments to determine if standards of rangeland health are being met.	Action C-LG/RM 4: —	Action D-LG/RM 4: Prioritize the processing of grazing permits or leases in the following way: Category “I” allotments receive the highest priority for revision followed by Category “M” and lastly by Category “C” allotments. A description of these categories can be found in Chapter 3, Affected Environment .	Action E-LG/RM 4: —	Action F-LG/RM 4: Same as Alternative B.
Action B-LG/RM 5: In PPMA, conduct land health assessments that include (at a minimum) indicators and measurements of structure/condition/composition of vegetation specific to achieving GRSG habitat objectives (Doherty et al. 2011a). If local/state seasonal habitat objectives are not available, use GRSG habitat recommendations from Connelly et al. 2000b and Hagen et al. 2007.	Action C-LG/RM 5: —	Action D-LG/RM 5: Within 10 years, complete land health assessments when grazing permits/leases come up for renewal reflective of the aforementioned categories. Priorities for land health assessments are: <ol style="list-style-type: none"> 1. Allotments or pastures in PPMA that have never been evaluated 2. Allotments or pastures in PPMA that have not been reevaluated in 10 or more years 3. Allotments or pastures in PGMA that have never been evaluated 4. Allotments or pastures in PGMA that have not been reevaluated in 10 or more years 	Action E-LG/RM 5: —	Action F-LG/RM 5: Same as Alternative B.
Action B-LG/RM 6: —	Action C-LG/RM 6: —	Action D-LG/RM 6: When conducting rangeland health assessments, use habitat indicators and associated values that are consistent with the HAF or with values adjusted for regional conditions to determine the suitability of PPMA. For allotments or pastures not meeting the indicators and associated values for suitable GRSG habitat, and livestock grazing is a causal factor, changes in grazing management must be made as soon as practical but prior to the start of the next grazing season. If all rangeland health standards and guidelines are met and GRSG habitat is rated as suitable as per the HAF or per values adjusted for regional conditions, require no	Action E-LG/RM 6: Where livestock grazing management results in a forage use level detrimental to habitat quality, it is recommended changes in grazing management be made as soon as possible to recover habitat quality. Adjustments to grazing management should be conducted in accordance with regulations of responsible land management agency. Adaptive management that should be considered include: <ol style="list-style-type: none"> 1. changes in salting and watering locations 2. change in the season, fencing, duration or intensity of use 3. reducing grazing use levels 4. temporary livestock nonuse (rest) 	Action F-LG/RM 6: —

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<p>changes in current management or activity plans or permits/leases.</p> <p>Within PPMA managing livestock grazing to provide residual cover of herbaceous vegetation consistent with habitat indicators and associated values found in the HAF or as adjusted for regional conditions. Management practices that should be considered include:</p> <ol style="list-style-type: none"> 1. rotational grazing 2. changes in salting and watering locations 3. change in season, duration, or intensity of use 4. temporary livestock nonuse (rest) 5. re-locating fences 6. extended livestock nonuse until specific local objectives are met 	<p>extended livestock nonuse until specific local objectives are met as identified by implementation group.</p>	
<p>Action B-LG/RM 7: Develop specific objectives to conserve, enhance or restore PPMA based on BLM ESDs and assessments (including within wetlands and riparian areas). If an effective grazing system that meets GRSG habitat requirements is not already in place, analyze at least one alternative that conserves, restores or enhances GRSG habitat in the NEPA document prepared for the permit renewal (Doherty et al. 2011b; Williams et al. 2011).</p>	<p>Action C-LG/RM 7: —</p>	<p>Action D-LG/RM 7: Develop specific objectives to conserve, enhance or restore PPMA based on ESDs and assessments (including within wetlands and riparian areas). If an effective grazing system that meets GRSG habitat requirements is not already in place, analyze at least one alternative that conserves, restores or enhances GRSG habitat in the NEPA document prepared for the permit renewal (Doherty et. al. 2011b; Williams et. al. 2011). The objective is to attain a suitable habitat rating that is consistent with the HAF or with values adjusted for regional conditions.</p>	<p>Action E-LG/RM 7: —</p>	<p>Action F-LG/RM 7: —</p>
<p>Action B-LG/RM 8: In PPMA, manage for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve GRSG seasonal habitat objectives.</p>	<p>Action C-LG/RM 8: —</p>	<p>Action D-LG/RM 8: Same as Alternative B.</p>	<p>Action E-LG/RM 8: —</p>	<p>Action F-LG/RM 8: Manage for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve GRSG habitat objectives.</p>
<p>Action B-LG/RM 9: Implement management actions (grazing decisions, AMP/Conservation Plan development, or other agreements) to modify grazing management to meet seasonal GRSG habitat requirements (Connelly et al. 2011b). Consider singly, or in combination, changes</p>	<p>Action C-LG/RM 9: —</p>	<p>Action D-LG/RM 9: Where range land health standards are not being met (grazing decisions, AMP/Conservation Plan development, or other agreements) in PPMA or PGMA, modify grazing management to meet seasonal GRSG habitat requirements and to achieve a suitable rating consistent</p>	<p>Action E-LG/RM 9: —</p>	<p>Action F-LG/RM 9: Implement management actions (grazing decisions, AMP/Conservation Plan development, or other plans or agreements) to modify grazing management to meet seasonal sage-grouse habitat requirements (Connelly et al. 2011b). Consider singly, or in combination, changes</p>

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
in: 1. Season or timing of use 2. Numbers of livestock (includes temporary nonuse or livestock removal) 3. Distribution of livestock use 4. Intensity of use; and 5. Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas, and goats; Briske et al. 2011).		with the HAF or with values adjusted for regional conditions. Consider the following changes in: 1. Season or timing of use 2. Numbers of livestock (includes temporary nonuse or livestock removal) 3. Distribution of livestock use 4. Intensity of use 5. Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas, and goats; Briske et al. 2011) 6. Adjustments in allowable utilization level 7. Extended rest or temporary closure from grazing 8. Permanent closure to grazing		in: 1. Season, timing, or frequency of livestock use 2. Numbers/AUMs of livestock (includes temporary nonuse or livestock removal) 3. Distribution of livestock use 4. Intensity of livestock use 5. Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas, and goats; Briske et al. 2011).
Action B-LG/RM 10: During drought periods, prioritize evaluating effects of the drought in PPMA relative to their needs for food and cover. Since there is a lag in vegetation recovery following drought (Thurow and Taylor 1999; Cagney et al. 2010), ensure that post-drought management allows for vegetation recovery that meets GRSG needs in PPMA.	Action C-LG/RM 10: —	<p>Action D-LG/RM 10: During drought conditions, make the principal focus to maintain long-term health and productivity of public rangelands in PPMA.</p> <p>Follow guidance in Washington Office IM 2013-094 (Resource Management During Drought) or most current BLM policy when making grazing adjustments during drought. Use a recognized drought indicator, such as the Drought Monitor or Palmer Drought Severity Index, to determine when abnormally dry or drought conditions are developing, present, or easing. When such conditions are developing or present:</p> <ol style="list-style-type: none"> 1. Conduct pre- season assessments prior to livestock turn out 2. Monitor vegetation conditions during authorized livestock use periods to determine need for early removal or other changes to meet seasonal GRSG habitat objectives. <p>As drought conditions appear to be easing and prior to re- authorizing livestock use, evaluate vegetation conditions utilizing methods that measure habitat suitability, particularly in breeding and nesting areas</p>	Action E-LG/RM 10: —	Action F-LG/RM 10: During drought periods, prioritize evaluating effects of drought in sage-grouse habitat areas relative to their biological needs, as well as drought effects on ungrazed reference areas. Since there is a lag in vegetation recovery following drought (Thurow and Taylor 1999; Cagney et al. 2010), ensure that post-drought management allows for vegetation recovery that meets sage-grouse needs in sage-grouse habitat areas based on GRSG habitat objectives.

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		using an interdisciplinary team to determine whether existing vegetation conditions can both support livestock grazing and GRSG habitat needs. Coordinate all management actions with ODFW.		
Action B-LG/RM 11: Manage riparian areas and wet meadows for proper functioning condition within PPMA.	Action C-LG/RM 11: —	Action D-LG/RM 11: —	Action E-LG/RM 11: —	Action F-LG/RM 11: Same as Alternative B.
Action B-LG/RM 12: Within PPMA and PGMA, manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing. Also conserve or enhance these wet meadow complexes to maintain or increase amount of edge and cover within that edge to minimize elevated mortality during the late brood rearing period (Hagen et al. 2007; Kolada et al. 2009; Atamian et al. 2010).	Action C-LG/RM 12: —	Action D-LG/RM 12: Manage wet meadows and riparian areas to maintain the characteristic species composition for the given ecological site. Include as a habitat objective(s) in AMPs or activity plans: <ol style="list-style-type: none"> 1. Maintain sufficient cover for broods both along edges and within meadows. 2. Manage lotic and lentic riparian community succession in an upward trend to achieve PFC. 	Action E-LG/RM 12: —	Action F-LG/RM 12: Within GRSG habitats, manage wet meadows to maintain a component of perennial forbs with diverse species richness and productivity relative to site potential (e.g., reference state) to facilitate brood rearing. Conserve or enhance these wet meadow complexes to maintain or increase the amount of edge and cover within that edge to minimize elevated mortality during the late brood-rearing period (Hagen et al. 2007; Kolada et al. 2009; Atamian et al. 2010).
Action B-LG/RM 13: Where riparian areas and wet meadows meet proper functioning condition, strive to attain reference state vegetation relative to the ecological site description.	Action C-LG/RM 13: —	Action D-LG/RM 13: Same as above.	Action E-LG/RM 13: —	Action F-LG/RM 13: Same as Alternative B.
Action B-LG/RM 14: Within PPMA, reduce hot season grazing on riparian and meadow complexes to promote recovery or maintenance of appropriate vegetation and water quality. Utilize fencing/herding techniques or seasonal use or livestock distribution changes to reduce pressure on riparian or wet meadow vegetation used by GRSG in the hot season (summer; Aldridge and Brigham 2002; Crawford et al. 2004; Hagen et al. 2007).	Action C-LG/RM 14: —	Action D-LG/RM 14: Same as above	Action E-LG/RM 14: —	Action F-LG/RM 14: —
Action B-LG/RM 15: —	Action C-LG/RM 15: —	Action D-LG/RM 15: Same as Alternative E	Action E-LG/RM 15: The timing and location of livestock turnout and trailing should not contribute to livestock concentrations on leks during the GRSG breeding season.	Action F-LG/RM 15: —
Action B-LG/RM 16: Authorize new water development for diversion from spring or seep source only when PPMA would benefit from the development. This includes developing new water sources for livestock	Action C-LG/RM 16: —	Action D-LG/RM 16: Authorize new and relocate or modify existing range improvements using seeps or springs as a water source to enhance functionality during time periods that livestock are absent from	Action E-LG/RM 16: Locate new or relocate livestock water developments within GRSG habitat to maintain or enhance habitat quality.	Action F-LG/RM 16: Authorize no new water developments for diversion from spring or seep sources within sage-grouse habitat.

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
as part of an AMP/conservation plan to improve GRSG habitat.		the allotment and retrofit with wildlife escape ramps to maintain, enhance, or reestablish riparian areas located within in PPMA and PGMA as well as areas in the sagebrush biome outside of GRSG.		
Action B-LG/RM 17: Analyze springs, seeps and associated pipelines to determine if modifications are necessary to maintain the continuity of the predevelopment riparian area within PPMA. Make modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to GRSG.	Action C-LG/RM 17: —	Action D-LG/RM 17: Same as above	Action E-LG/RM 17: Spring developments both new and old should be constructed or modified to maintain their free-flowing natural and wet meadow characteristics.	Action F-LG/RM 17: Analyze springs, seeps and associated water developments to determine if modifications are necessary to maintain the continuity of the predevelopment riparian area within sage-grouse habitats. Make modifications where necessary, including dismantling water developments.
Action B-LG/RM 18: —	Action C-LG/RM 18: —	Action D-LG/RM 18: Same as Alternative E	Action E-LG/RM 18: Ensure wildlife accessibility to water and install escape ramps in all new and existing water troughs.	Action F-LG/RM 18: —
Action B-LG/RM 19: —	Action C-LG/RM 19: —	Action D-LG/RM 19: —	Action E-LG/RM 19: Construct new livestock facilities (livestock troughs, fences, corrals, handling facilities, “dusting bags,” etc.) at least 0.6 mile (1 kilometer) from leks to avoid concentration of livestock, reduce collision hazards to flying birds, or eliminate avian predator perches.	Action F-LG/RM 19: —
Action B-LG/RM 20: —	Action C-LG/RM 20: —	Action D-LG/RM 20: For playas, wetlands, and springs that have been hydrologically modified for livestock watering, identify those water improvements that have population limiting implications, and develop plans for rehabilitation. Further actions should be instigated for development of water off site; new water should be available before existing water is eliminated. Assist in surveillance with ODFW if an outbreak of West Nile virus is discovered.	Action E-LG/RM 20: For playas, wetlands, and springs that have been hydrologically modified for livestock watering, local working groups should identify water improvements that have population limiting implications. These should be rehabilitated and off-site livestock watering facilities developed; new water should be available before existing water is eliminated.	Action F-LG/RM 20: —
Action B-LG/RM 21: —	Action C-LG/RM 21: —	Action D-LG/RM 21: Evaluate feasibility of mosquito control including: <ol style="list-style-type: none"> 1. Mitigate water sources that provide breeding habitat for mosquitoes 2. Change irrigation techniques from flood to sprinkler systems 3. Control water overflow 4. Use larvicides in areas where mosquito habitat cannot be reduced 5. Evaluate the effectiveness of spraying for adult mosquitoes 	Action E-LG/RM 21: Same as Alternative D. Additionally, continue to educate public about West Nile virus and GRSG.	Action F-LG/RM 21: —

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Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		6. Consider using mosquito specific insecticides		
Action B-LG/RM 22: In PPMA, only allow treatments that conserve, enhance or restore GRSG habitat (this includes treatments that benefit livestock as part of an AMP/Conservation Plan to improve GRSG habitat).	Action C-LG/RM 22: —	Action D-LG/RM 22: In PPMA, forage enhancement treatments must also conserve, enhance, or restore GRSG habitat in order to be authorized.	Action E-LG/RM 22: —	Action F-LG/RM 22: Ensure that vegetation treatments create landscape patterns that most benefit sage-grouse. Only allow treatments that are demonstrated to benefit GRSG and retain sagebrush height and cover consistent with GRSG habitat objectives (this includes treatments that benefit livestock as part of an AMP/Conservation Plan to improve sage-grouse habitat).
Action B-LG/RM 23: Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to PPMA to determine if they should be restored to sagebrush or habitat of higher quality for GRSG. If these seedings are part of an AMP/Conservation Plan or if they provide value in conserving or enhancing the rest of the PPMA, then no restoration would be necessary. Assess the compatibility of these seedings for GRSG habitat or as a component of a grazing system during the land health assessments (Davies et al. 2011).	Action C-LG/RM 23: —	Action D-LG/RM 23: Same as Alternative B	Action E-LG/RM 23: —	Action F-LG/RM 23: Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to sage-grouse habitat to determine if they should be restored to sagebrush or habitat of higher quality for sage-grouse. If these seedings provide value in conserving or enhancing GRSG habitat, then no restoration would be necessary. Assess the compatibility of these seedings for sage-grouse habitat during the land health assessments.
Action B-LG/RM 24: In PPMA, design any new structural range improvements and location of supplements (salt or protein blocks) to conserve, enhance, or restore GRSG habitat through an improved grazing management system relative to GRSG objectives. Structural range improvements, in this context, include but are not limited to: cattle guards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction.	Action C-LG/RM 24: —	Action D-LG/RM 24: Same as Alternative B.	Action E-LG/RM 24: Reduce physical disturbance to GRSG leks from livestock through managing locations of salt or mineral supplements by placing them greater than 1 km (0.6 mi) from lek locations.	Action F-LG/RM 24: Avoid all new structural range developments in occupied GRSG habitat unless independent peer-reviewed studies show that the range improvement structure benefits GRSG. Structural range developments, in this context, include but are not limited to cattle guards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction. Consider the comparative cost of changing grazing management instead of constructing additional range developments.

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Action B-LG/RM 25: In PPMA, evaluate existing structural range improvements and location of supplements (salt or protein blocks) to make sure they conserve, enhance or restore GRSG habitat.	Action C-LG/RM 25: —	Action D-LG/RM 25: Same as Alternative B.	Action E-LG/RM 25: —	Action F-LG/RM 25: Same as Alternative B.
Action B-LG/RM 26: To reduce outright GRSG strikes and mortality, remove, modify, or mark fences in high risk areas within PPMA based on proximity to lek, lek size, and topography (Christiansen 2009; Stevens 2011).	Action C-LG/RM 26: —	Action D-LG/RM 26: Same as Alternative B.	Action E-LG/RM 26: Those fences identified as detrimental to local GRSG populations or within 1 mile (1.6 kilometers) of an active lek or known seasonal use area should be marked with anti-strike markers.	Action F-LG/RM 26: Remove, modify, or mark fences in areas of moderate or high risk of GRSG strikes within sage-grouse habitat based on proximity to lek, lek size, and topography (Christiansen 2009; Stevens 2011).
Action B-LG/RM 27: In PPMA, monitor for, and treat invasive species associated with existing range improvements (Gelbard and Belnap 2003; Bergquist et al. 2007).	Action C-LG/RM 27: —	Action D-LG/RM 27: —	Action E-LG/RM 27: —	Action F-LG/RM 27: Same as Alternative B.
Action B-LG/RM 28: Maintain retirement of grazing privileges as an option in PPMA when the current permittee is willing to retire grazing on all or part of an allotment. Analyze the adverse impacts of no livestock use on wildfire and invasive species threats (Crawford et al. 2004) in evaluating retirement proposals.	Action C-LG/RM 28: —	Action D-LG/RM 28: Same as Alternative B.	Action E-LG/RM 28: —	Action F-LG/RM 28: Same as Alternative B.
Action B-LG/RM 29: —	Action C-LG/RM 29: —	Action D-LG/RM 29: —	Action E-LG/RM 29: —	Action F-LG/RM 29: In each planning process, identify grazing allotments where permanent retirement of grazing privileges would be potentially beneficial to GRSG.
Action B-LG/RM 30: —	Action C-LG/RM 30: —	Action D-LG/RM 30: —	Action E-LG/RM 30: Measurement of grazing levels should be conducted on that portion of the pasture that is known to be GRSG habitat, not on average use throughout the entire pasture.	Action F-LG/RM 30: —
Action B-LG/RM 31: —	Action C-LG/RM 31: —	Action D-LG/RM 31: —	Action E-LG/RM 31: —	Action F-LG/RM 31: Any vegetation treatment plan must include pretreatment data on wildlife and habitat condition, establish nongrazing exclosures, and include long-term monitoring where treated areas are monitored for at least three years before grazing returns. Continue monitoring for five years after livestock are returned to the area, and compare to treated, ungrazed exclosures, as well as untreated areas.
Action B-LG/RM 32: —	Action C-LG/RM 32: —	Action D-LG/RM 32: Avoid supplemental winter feeding of livestock in PPMA and PGMA unless it is part of a plan to improve ecological health or to create mosaics in	Action E-LG/RM 32: Avoid supplemental winter feeding of livestock in known/occupied habitat unless it is part of a plan to improve ecological health or to	Action F-LG/RM 32: —

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Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		dense sagebrush stands that are needed for optimum GRSG habitat. Supplemental feeding must be approved by the authorized official as per IM OR 2011-039, or subsequent direction.	create mosaics in dense sagebrush stands that are needed for optimum grouse habitat.	
Action B-LG/RM 33: —	Action C-LG/RM 33: —	Action D-LG/RM 33: Develop and implement strategies to deal with disease outbreaks.	Action E-LG/RM 33: Same as Alternative D. Additionally investigate and record sage-grouse deaths that could be attributed to disease or parasites. Monitor radiomarked GRSG populations during West Nile virus season (July–September) where applicable.	Action F-LG/RM 33: —
Recreation (RC)				
Action B-RC 1: Only allow BLM Special Recreation Permits (SRPs) in PPMA that have neutral or beneficial impacts on PPMA.	Action C-RC 1: Same as Alternative A.	<p>Action D-RC 1: Evaluate, and change if necessary, allowances for existing SRPs and recreation use permits (RUPs) with stipulations in PPMA in order to reduce direct and indirect disturbance to GRSG.</p> <p>When evaluating the permits, particular attention should be paid to noise and permitted activities within 3.2 miles of a lek during breeding and nesting season. Consideration should be given to including mitigation stipulations in permits for direct and indirect disturbance related to vehicle use, noise, type and season of recreation activities near occupied GRSG habitat.</p>	Action E-RC 1: Protect existing leks and provide secure GRSG breeding habitat with minimal disturbance and harassment through seasonal closures of roads and areas.	Action F-RC 1: Same as Alternative B.
Action B-RC 2: —	Action C-RC 2: Same as Alternative A.	<p>Action D-RC 2: Evaluate permitted recreation actions (SRPs and RUPs) for GRSG disturbance before issuing new permits.</p> <p>Avoid construction of facilities that provide avian predator perches unless they include mitigating features such as perch deterrents.</p> <p>Incorporate other activity level plan options as necessary to meet GRSG objectives (e.g., seasonal closures of non-street-legal vehicles or seasonal closure with all vehicles).</p>	Action E-RC 2: —	Action F-RC 2: Seasonally prohibit camping and other nonmotorized recreation within 4 miles of active GRSG leks.
Action B-RC 3: —	Action C-RC 3: —	<p>Action D-RC 3: Evaluate OHV Recreation SRMAs and ensure consistency with GRSG conservation guidance during the Travel Management activity-level planning. These areas may include:</p> <ul style="list-style-type: none"> • Virtue Flats (Baker) 	Action E-RC 3: —	Action F-RC 3: —

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Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<ul style="list-style-type: none"> Radar Hill (Burns) Millican Valley (Prineville) <p>Overall SRP Management: Insure that SRPs are issued with seasonal and area guidelines regarding GRSG. Do not issue SRPs during breeding season in PPMA and PGMA unless neutral or beneficial impacts on GRSG.</p> <p>Evaluate Recreation Sites for season of use relative to PPMA and PGMA</p>		
Action B-RC 4: —	Action C-RC 4: —	Action D-RC 4: Overlay leks and compare with designated Special Recreation Management Areas and evaluate season of use, SRPs allowed, and make changes as necessary based on seasonal restriction.	Action E-RC 4: —	Action F-RC 4: —
Action B-RC 5: —	Action C-RC 5: —	Action D-RC 5: Reduce or eliminate direct and indirect disturbance based on season of use, type of use (motorized type) and recreation sites located within PPMA.	Action E-RC 5: Provide GRSG habitats security from direct human disturbance during the winter and breeding seasons (when birds are concentrated and susceptible to harassment).	Action F-RC 5: —
Action B-RC 6: —	Action C-RC 6: —	Action D-RC 6: —	Action E-RC 6: If alternative measures have not been successful in reducing disturbances initiate seasonal or area closures as necessary to protect GRSG habitats.	Action F-RC 6: —
Action B-RC 7: —	Action C-RC 7: —	Action D-RC 7: —	Action E-RC 7: Assist with developing public viewing areas of GRSG leks with oversight from ODFW and land management agencies to minimize disturbance.	Action F-RC 7: —
Action B-RC 8: —	Action C-RC 8: —	<p>Action D-RC 8: Facilities (i.e., kiosks, toilets, and signs) should be constructed to minimize disturbance in known/occupied GRSG nesting and early brood rearing habitat.</p> <p>As appropriate, develop signs and kiosks to educate visitors about GRSG conservation. Promote education and outreach through Soil and Water Conservation Districts (SWCD) and local Implementation Teams to encourage participation in the NRCS's Sage-Grouse Initiative at kiosk and other public education sites.</p>	Action E-RC 8: Facilities (e.g., kiosks, toilets, and signs) should be constructed at least 2 miles from leks to minimize disturbance during the breeding season. Facilities (e.g., kiosks, toilets, and signs) should be constructed to minimize disturbance in known/occupied GRSG nesting and early brood rearing habitat. Avoid construction of facilities that provide avian predator perches unless they include mitigating features such as perch guards.	Action F-RC 8: —

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Action B-RC 9: —	Action C-RC 9: —	Action D-RC 9: —	Action E-RC 9: Maintain biological data collection from hunter harvests for estimating productivity, gender ratios, hatch dates, and nesting success, and surveying the prevalence of West Nile virus. Continue to collect blood samples from hunter harvested sage-grouse to monitor the presence of the disease over a broad area.	Action F-RC 9: —
Action B-RC 10: —	Action C-RC 10: —	Action D-RC 10: —	Action E-RC 10: Reevaluate regulations every 5 years consistent with the ODFW Upland Game Bird Framework.	Action F-RC 10: —
Travel Management (TM)				
Action B-TM 1: In PPMA, limit motorized travel to existing roads, primitive roads, and trails at a minimum, until such time as travel management planning is complete and routes are either designated or closed.	Action C-TM 1: In occupied habitat, limit motorized travel to existing roads and trails.	Action D-TM 1: Same as Alternative B, as well as the following. A final TMP due within 5 years of RMP Amendment completion. Areas in PPMA currently managed as closed would remain closed (Alternative A). Areas in PPMA, aside from those closed, would become limited OHV areas. The extent and intensity of OHV use should be assessed, as appropriate, prior to travel management planning.	Action E-TM 1: Restrict OHV use to areas greater than 2 miles (3.2 kilometers) from leks during the breeding season (approximately March 1 through July 15). OHV use should be restricted to on-trail or on-road use during the nesting season in areas known to be occupied by GRSG. Some playas serve as breeding display sites and could be impacted by off-road use. The extent and intensity of OHV use should be assessed. Quantifying OHV use (e.g., daily and seasonal use) assists in mitigating potential conflicts with GRSG habitat needs and recreational pursuits.	Action F-TM 1: Same as Alternative B.
Action B-TM 2: —	Action C-TM 2: Same as Alternative A.	Action D-TM 2: —	Action E-TM 2: Recommend no new development in Core habitat areas if it is GRSG habitat and there has been evidence of GRSG presence.	Action F-TM 2: Prohibit new road construction within 4 miles of active GRSG leks, and avoid new road construction in occupied GRSG habitat.
Action B-TM 3: In PPMA, travel management should evaluate the need for permanent or seasonal road or area closures.	Action C-TM 3: Same as Alternative A.	Action D-TM 3: —	Action E-TM 3: —	Action F-TM 3: Same as Alternative B.
Action B-TM 4: Complete activity level travel plans within 5 years of the record of decision. During activity level planning, where appropriate, manage routes in PPMA with current administrative/ agency purpose and need as administrative access only.	Action C-TM 4: Same as Alternative A.	Action D-TM 4: Same as Alternative B.	Action E-TM 4: —	Action F-TM 4: Same as Alternative B.
Action B-TM 5: —	Action C-TM 5: Same as Alternative A.	Action D-TM 5: —	Action E-TM 5: —	Action F-TM 5: In PPMA, limit route construction to realignments of existing routes if that realignment has a minimal impact on sage-grouse habitat, eliminates the

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
				need to construct a new road, or is necessary for motorist safety. Mitigate any impacts with methods that have been demonstrated to be effective to offset the loss of GRSG habitat.
Action B-TM 6: —	Action C-TM 6: Same as Alternative A.	Action D-TM 6: —	Action E-TM 6: —	Action F-TM 6: Allow no upgrading of existing routes that would change route category (road, primitive road, or trail) or capacity unless it is necessary for motorist safety, or eliminates the need to construct a new road. Any impacts shall be mitigated with methods that have been demonstrated to be effective to offset the loss of GRSG habitat.
Action B-TM 7: —	Action C-TM 7: Same as Alternative A.	Action D-TM 7: —	Action E-TM 7: —	Action F-TM 7: When reseeding closed roads, primitive roads and trails, use appropriate native seed mixes and require the use of transplanted sagebrush.
Lands and Realty (LR) – Right-of-Way				
<p>Action B-LR 1: Make PPMA exclusion areas for new BLM ROW authorizations.</p> <p>Subject to valid existing rights: where new ROWs associated with valid existing rights are required, co-locate new ROWs within existing ROWs or where GRSG impacts would be minimized. Use existing roads, or realignments as described above, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PPMA. If that disturbance exceeds 3% for that area, then evaluate and implement additional effective mitigation on a case-by-case basis to offset the resulting loss of GRSG habitat.</p>	<p>Action C-LR 1: New transmission corridors, ROWs for corridors (oil, gas, water/aquifer mining), and communication or other towers are prohibited in ACECs and occupied habitats.</p> <p>Site new corridors/facilities in non-habitat, and bundle them with existing corridors to the maximum extent possible.</p>	<p>Action D-LR 1: PPMA currently managed as exclusion areas for new BLM ROW authorizations (Alternative A) would remain exclusion areas. All other PPMA would be designated as avoidance areas for new ROW authorizations.</p> <p>Development should only occur in non-habitat areas. If development would occur in PPMA and non-habitat areas are unfeasible, then development must occur in the least suitable habitat for sage-grouse. Require mitigation for impacts on sage-grouse habitat with no net loss, net benefit standard in PPMA. Disturbance may cause temporary habitat loss that would be mitigated over time to achieve no net loss.</p> <p>Development could occur within the avoidance areas if that disturbance was within or under the 3% allowable as measured at the appropriate scale, then evaluate and implement effective mitigation to offset the resulting loss of GRSG habitat.</p> <p>Disturbance could be allowed up to 3%. Applicant must apply restoration mitigation to a nearby area prior to causing new</p>	<p>Action E-LR 1: Same as Alternative B, unless non-habitat.</p> <p>Use existing communication/emitter sites to consolidate activities of new construction, except where topographically impossible, and install new communication sites in forested landscapes. However, off-site mitigation should be considered if the area of impact from new construction is less than or equal to 640 acres; disturbance of larger areas for communication sites should be critically evaluated.</p> <p>Disturbance from high volume roads can lead to avoidance of otherwise suitable habitat or direct mortality of birds. Minimize the construction of new roads through occupied GRSG habitat, especially lek, nesting and brood-rearing areas.</p> <p>Recommend no development in Core habitat areas if it has been identified as GRSG habitat and there has been evidence of GRSG presence.</p> <p>Use guidance provided by Core Area approach in Mitigation Framework Plan for</p>	<p>Action F-LR 1: Occupied sage-grouse habitat areas shall be exclusion areas for new ROWs. Consider the following exceptions:</p> <ol style="list-style-type: none"> 1. Within designated ROW corridors encumbered by existing ROW authorizations: new ROWs may be co-located only if the entire footprint of the proposed project (including construction and staging) can be completed within the existing disturbance associated with the authorized ROWs. 2. Subject to valid existing rights: where new ROWs associated with valid existing rights are required, co-locate new ROWs within existing ROWs or where it best minimizes GRSG impacts. Use existing roads, or realignments as described above, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PPMA. If that disturbance exceeds 3% for that area, then make additional

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<p>disturbance to ensure 3% threshold is not exceeded. Examples of mitigation would be burying a power line, decommissioning and revegetating a road, or restoring a mined area.</p> <p>New disturbance would not be allowed in PPMA's if the new disturbance would cause the 3% threshold to be exceeded. ROWs within PPMA may be allowed if they do not create new disturbance, even where the 3% threshold is currently exceeded; for example, an applicant requests a ROW over an existing road.</p> <p>Allow private landowners a reasonable degree of access to private land. If feasible, landowner would be required to take an alternate route that was not through PPMA; if an alternate route is infeasible mitigation would be considered to either keep disturbance under 3% or return disturbance levels to those occurring at the time the application was received.</p> <p>Where new ROWs are allowed within the avoidance area, co-locate new ROWs within existing ROWs where possible. If not possible, consider effective mitigation to offset the resulting loss of sage-grouse habitat. Conduct additional, effective, mitigation first within the same population area where the impact is realized. If not possible, conduct mitigation within the same management zone as the impact.</p>	<p>sage-grouse habitats (ODFW 2012b or subsequent version) for siting developments. Use Fish and Wildlife Habitat Mitigation Policy (ODFW 2012a or subsequent version) to avoid, minimize, and mitigate impacts on sage-grouse habitat.</p>	<p>mitigation that has been demonstrated to be effective to offset the resulting loss of sage-grouse habitat.</p>
Action B-LR 2: Evaluate and take advantage of opportunities to remove, bury, or modify existing power lines within priority GRSG habitat areas.	Action C-LR 2: Same as Alternative A.	Action D-LR 2: Evaluate power lines in PPMA by District and identify which power lines would provide the most benefit to the species by being buried, modified, or relocated. At renewal or amendment discuss with the ROW holder the technical and financial feasibility of burying or relocating the existing power lines. If it is technically or financially feasible to bury or relocate the existing power lines require the ROW holder to do so.	Action E-LR 2: In some cases power lines should be buried to minimize the disturbance.	Action F-LR 2: Same as Alternative B

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Action B-LR 3: Where existing leases or ROWs have had some level of development (road, fence, well, etc.) and are no longer in use, reclaim the site by removing these features and restoring the habitat.	Action C-LR 3: Same as Alternative A.	Action D-LR 3: When a ROW grant expires, is relinquished, or terminated, required rehabilitation is a term and condition of the FLPMA ROW grant, in compliance with 43 CFR 2805.12(i) and 43 CFR 2805.12 (l)(3)(5).	Action E-LR 3: —	Action F-LR 3: Same as Alternative B
Action B-LR 4: Planning Direction Note: Relocate existing ROW corridors crossing PPMA void of any authorized ROWs, outside of the PPMA. If relocation is not possible, undesignate that entire corridor during the planning process.	Action C-LR 4: Planning Direction Note: Same as Alternative A.	Action D-LR 4: Planning Direction Note: No similar Planning Direction Note.	Action E-LR 4: Planning Direction Note: No similar Planning Direction Note.	Action F-LR 4: Planning Direction Note: Same as Alternative B.
Action B-LR 5: Manage PGMA as avoidance areas for new ROWs.	Action C-LR 5: Same as Alternative A.	Action D-LR 5: PGMA would be managed the same as under Alternative A, except, for all new ROWs proposed in PGMA, the local BLM Wildlife Biologist, in cooperation with ODFW, shall conduct a field evaluation to determine if the proposal would impact occupied, suitable or potential habitat for GRSG. If the habitat is determined to be occupied, impacts would be avoided. If the habitat is unoccupied but apparently suitable or potential habitat for GRSG, impacts would be minimized to the full extent possible. Impacts that cannot be entirely avoided would be mitigated to achieve no net loss of GRSG habitat.	Action E-LR 5: In Low Density and all other GRSG habitat outside of Core Area, require mitigation to avoid, minimize, and mitigate impacts on GRSG habitat caused by BLM-administered activities. Appropriate set-back distances (thresholds) regarding density (number of units per area), size (total area disturbed), and noise levels of energy developments need examination to determine what the effects are on GRSG. Until better information is available, managers should err on the side of the birds' biology and use the greatest set-back distance where feasible and necessary.	Action F-LR 5: —
Action B-LR 6: Where new ROWs are necessary in PGMA, co-locate new ROWs within existing ROWs where possible.	Action C-LR 6: Same as Alternative A.	Action D-LR 6: Same as Alternative B.	Action E-LR 6: Use existing utility corridors and rights-of-ways to consolidate activities to reduce habitat loss, degradation, and fragmentation by new construction. Where topographically possible, install new power lines within existing power line corridors or highway rights-of-way.	Action F-LR 6: —
Action B-LR 7: —	Action C-LR 7: —	Action D-LR 7: Same as Alternative E.	Action E-LR 7: Meteorological towers should be constructed without guy wires. If guy wires are necessary, they should be marked with anti-strike devices.	Action F-LR 7: Do not site wind energy development in occupied GRSG habitat (Jones 2012).
Action B-LR 8: —	Action C-LR 8: —	Action D-LR 8: —	Action E-LR 8: —	Action F-LR 8: Site wind energy development at least 5 miles from active GRSG leks.
Action B-LR 9: —	Action C-LR 9: Prohibit industrial solar projects in ACECs and occupied habitats.	Action D-LR 9: —	Action E-LR 9: —	Action F-LR 9: —

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Action B-LR 10: —	Action C-LR 10: Amend ROWs to require features that enhance GRSG habitat security. Existing designated corridors in ACECs may be accessed for maintenance.	Action D-LR 10: —	Action E-LR 10: —	Action F-LR 10: —
Lands and Realty (LR) – Land Tenure (Land tenure adjustments could include acquisition, donation, disposal, or exchanges)				
Action B-LR 11: Retain public ownership of PPMA. Consider exceptions where: <ol style="list-style-type: none"> There is mixed ownership, and land exchanges would allow for additional or more contiguous federal ownership patterns within PPMA. Under PPMA with minority federal ownership, include an additional, effective mitigation agreement for any disposal of federal land. As a final preservation measure consideration should be given to pursuing a permanent conservation easement.	Action C-LR 11: Retain public ownership of all BLM-administered lands in occupied habitats and identified restoration and rehab land areas.	Action D-LR 11: Retain public ownership of PPMA. Sales of BLM-administered lands in PPMA are not allowed. BLM-administered lands within PPMA would be Z-I lands. Land Exchange Exception: There is mixed ownership, and land exchanges would allow for additional or more contiguous federal ownership patterns within PPMA, provided that such exchange results in additional or more contiguous GRSG habitat of equal or better quality of BLM-administered land. Prioritize restoration activities for acquired lands based on Focal Areas.	Action E-LR 11: Evaluate GRSG habitat values when federal or state lands are being considered for sale or exchange. This should apply to the quality of the habitat as well as the quantity (i.e., should not be swapping high-quality sagebrush for low quality sagebrush). Maintain existing GRSG habitats, with particular attention to areas of intact habitat.	Action F-LR 11: Same as Alternative B, without exceptions for disposal to consolidate ownership that would be beneficial to GRSG.
Action B-LR 12: Where suitable management actions cannot be achieved in PPMA, seek to acquire state and private lands with intact subsurface mineral estate by donation, purchase or exchange in order to best conserve, enhance or restore sage-grouse habitat.	Action C-LR 12: BStrive to acquire important private lands in BLM-designated ACECs. Prioritize acquisition over easements. Reclassify BLM-administered lands within PPMA as Z-I lands.	Action D-LR 12: Same as Alternative B.	Action E-LR 12: To meet the objective of the Mitigation Policy with respect to sage-grouse habitats within Low Density areas, prioritize and select mitigation sites based on the following criteria (in order of preference): <ol style="list-style-type: none"> 1) Core Areas that occur within a Conservation Opportunity Area or other landscapes with on-going sage-grouse conservation actions 2) Core Areas that occur outside of a Conservation Opportunity Area 3) Low Density Areas that occur within a Conservation Opportunity Area or other landscapes with on-going sage-grouse conservation actions 4) Low Density Areas that occur outside of a Conservation Opportunity Area Conservation Opportunity Areas are landscapes of high biological integrity as identified in The Oregon Conservation Strategy (ODFW 2006).	Action F-LR 12: —

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Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Leasable Minerals – Leased Federal Fluid Mineral Estate (Including Geothermal) (MLS)				
Action B-MLS I: In PPMA, apply the following conservation measures through RMP implementation decisions (e.g., approval of an Application for Permit to Drill and Sundry Notice) and upon completion of the environmental record of review (43 CFR 3162.5), including appropriate documentation of compliance with NEPA. In this process evaluate, among other things: <ol style="list-style-type: none"> Whether the conservation measure is “reasonable” (43 CFR 3101.1-2) with the valid existing rights Whether the action is in conformance with the approved RMP 	Action C-MLS I: Same as Alternative A.	Action D-MLS I: Same as Alternative B. Additionally, apply the 3% disturbance limitation for development within PPMA. Issue Written Orders of the Authorized Office requiring reasonable protective measures consistent with the lease terms where necessary to avoid or minimize impacts on GRSG populations and its habitat. Include actions in the authorization that would minimize habitat loss and promote restoration of habitat when development activities cease in areas where GRSG populations have been substantially diminished and where few birds remain.	Action E-MLS I: No development in Core Areas if it is sage-grouse habitat and there has been evidence of sage-grouse presence. Use guidance provided by Core Area approach in Mitigation Framework for Sage-Grouse Habitats (ODFW 2012b or subsequent version) for siting developments. Use Fish and Wildlife Habitat Mitigation Policy (ODFW 2012a or subsequent version) to avoid, minimize, and mitigate impacts on sage-grouse habitat.	Action F-MLS I: Apply the following conservation measures as Conditions of Approval at the project and well permitting stages, and through RMP implementation decisions and upon completion of the environmental record of review (43 CFR § 3162.5), including appropriate documentation of compliance with NEPA. In this process evaluate, among other things: <ol style="list-style-type: none"> Whether the conservation measure is “reasonable” (43 CFR § 3101.1-2) with the valid existing rights; and Whether the action is in conformance with the approved RMP.
Conservation Measure B-MLS I: In PPMA, provide the following conservation measures as terms and conditions of the approved RMP: Do not allow new surface occupancy on federal leases within PPMA, this includes winter concentration areas (Doherty et al. 2008; Carpenter et al. 2010) during any time of the year. Consider an exception: <ol style="list-style-type: none"> If the lease is entirely within PPMA, apply a 4-mile NSO stipulation around the lek, and limit permitted disturbances to 1 per section with no more than 3% surface disturbance in that section. If the entire lease is within the 4-mile lek perimeter, limit permitted disturbances to 1 per section with no more than 3% surface disturbance in that section. Require any development to be placed at the most distal part of the lease from the lek, or, depending on topography and other habitat aspects, in an area that is less demonstrably harmful to GRSG. 	Conservation Measure C-MLS I: Same as Alternative A.	Conservation Measure D-MLS I: In PPMA, provide the following as terms and conditions of the approved RMP to the extent allowed by law: Areas outside PPMA but within 1 mile of an occupied lek, if the lek is located within PPMA, would be open to leasing fluid minerals, subject to NSO stipulations. PPMA within 4 miles of an occupied lek, if the lek is located within PPMA, would be designated as open to fluid mineral leasing subject to NSO stipulations. PPMA beyond 4 miles of an occupied lek, if the lek is located within PPMA, would be designated as open to fluid mineral leasing subject to CSU stipulations (see list below) and the following TL stipulations: <ol style="list-style-type: none"> March 1 to June 30: Breeding (includes lek, nesting and early-brood rearing) July 1 - September 30: Late Brood-rearing October 1 - February 28: Wintering 	Conservation Measure E-MLS I: —	Conservation Measure F-MLS I: Same as Alternative B.

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<p>Where leasing/development is allowed within PPMA, development could occur if it adhered to the following controlled surface use stipulations:</p> <ol style="list-style-type: none">1. The development meets noise restrictions (noise at occupied leks does not exceed 10 decibels above ambient sound levels from 2 hours before to 2 hours after sunrise and sunset during breeding season);2. The development meets tall structure restrictions (a tall structure is any structure that has the potential to disrupt lekking or nesting birds by creating new perching/nesting opportunities and/or decrease the use of an area; a determination as to whether something is considered a tall structure would be based on local conditions such as vegetation or topography).3. Operators must submit a site-specific plan of development for roads, wells, pipelines, and other infrastructure prior to any development being authorized. This plan should outline how development on the lease would limit habitat fragmentation.4. The development does not exceed the 3% disturbance limit. <p>Areas outside PPMA and within 4 miles of an occupied lek, if the lek is located within PPMA, would be designated as open to fluid mineral leasing subject to CSU stipulations. Development in these areas could occur if it adhered to the following CSU stipulations:</p> <ol style="list-style-type: none">1. The development meets noise restrictions (noise at occupied leks does not exceed 10 decibels above ambient sound levels from 2 hours before to 2 hours after sunrise and sunset during breeding season).		

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<p>2. The development meets tall structure restrictions (a tall structure is any structure that has the potential to disrupt lekking or nesting birds by creating new perching/nesting opportunities and/or decrease the use of an area; a determination as to whether something is considered a tall structure would be determined based on local conditions such as vegetation or topography).</p> <p>The design features identified in Appendix D (of the NTT report) would be attached as lease notices to all new leases in PPMA and would be applied as technically feasible during the permitting process unless doing so would not be beneficial to GRSG.</p>		
Conservation Measure B-MLS 2: Apply a seasonal restriction on exploratory drilling that prohibits surface-disturbing activities during the nesting and early brood-rearing season in all PPMA during this period.	Conservation Measure C-MLS 2: Require timing avoidance periods.	Conservation Measure D-MLS 2: Same as Alternative B.	Conservation Measure E-MLS 2: —	Conservation Measure F-MLS 2: Apply a seasonal restriction on exploratory drilling that prohibits surface-disturbing activities during the nesting and brood-rearing season in all occupied sage-grouse habitat during this period. This seasonal restriction shall also to apply to related activities that are disruptive to GRSG, including vehicle traffic and other human presence.
Conservation Measure B-MLS 3: The BLM should closely examine the applicability of categorical exclusions in PPMA. If extraordinary circumstances review is applicable, the BLM should determine whether those circumstances exist.	Conservation Measure C-MLS 3: Same as Alternative A.	Conservation Measure D-MLS 3: Same as Alternative B.	Conservation Measure E-MLS 3: —	Conservation Measure F-MLS 3: Same as Alternative B.
Conservation Measure B-MLS 4: Complete Master Development Plans in lieu of Application for Permit to Drill (APD)-by-APD processing for all but wildcat wells.	Conservation Measure C-MLS 4: Same as Alternative A.	Conservation Measure D-MLS 4: Same as Alternative B.	Conservation Measure E-MLS 4: —	Conservation Measure F-MLS 4: Same as Alternative B.
Conservation Measure B-MLS 5: When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3% for that area. Consider an exception if: <ol style="list-style-type: none"> 1. Additional, effective mitigation is demonstrated to offset the resulting loss of GRSG. 2. When necessary, conduct additional, 	Conservation Measure C-MLS 5: Same as Alternative A.	Conservation Measure D-MLS 5: Same as Alternative B.	Conservation Measure E-MLS 5: —	Conservation Measure F-MLS 5: When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3% per section for that area. Consider an exception if: <ol style="list-style-type: none"> 1. Additional, effective mitigation is demonstrated to offset the resulting loss of GRSG (see Objectives). 2. When necessary, conduct additional,

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
<p>effective mitigation in a) PPMA or, less preferably, b) PGMA (dependent upon the area-specific ability to increase GRSG populations).</p> <p>3. Conduct additional, effective mitigation first within the same population area where the impact is realized, and if not possible then conduct mitigation within the same Management Zone as the impact, per GRSG Comprehensive Conservation Strategy (Stiver et al. 2006, pp. 2-17).</p>				<p>effective mitigation in occupied habitat (dependent upon the area-specific ability to increase GRSG populations).</p> <p>3. Conduct additional, effective mitigation first within the same population area where the impact is realized, and if not possible then conduct mitigation within the same Management Zone as the impact, per GRSG Comprehensive Conservation Strategy (Stiver et al. 2006, pp. 2-17).</p>
<p>Conservation Measure B-MLS 6: Require unitization when deemed necessary for proper development and operation of an area (with strong oversight and monitoring) to minimize adverse impacts on GRSG according to the Federal Lease Form, 3100-11 Sections 4 and 6.</p>	<p>Conservation Measure C-MLS 6: Same as Alternative A.</p>	<p>Conservation Measure D-MLS 6: Same as Alternative B, except that where 10% or less of the land is federal, encourage rather than require unitization to minimize adverse impacts on GRSG according to the Federal Lease Form, 3100-11 Sections 4 and 6.</p>	<p>Conservation Measure E-MLS 6: —</p>	<p>Conservation Measure F-MLS 6: Same as Alternative B.</p>
<p>Conservation Measure B-MLS 7: Identify areas where acquisitions (including subsurface mineral rights) or conservation easements, would benefit GRSG habitat.</p>	<p>Conservation Measure C-MLS 7: Same as Alternative A.</p>	<p>Conservation Measure D-MLS 7: Same as Alternative B.</p>	<p>Conservation Measure E-MLS 7: —</p>	<p>Conservation Measure F-MLS 7: Same as Alternative B.</p>
<p>Conservation Measure B-MLS 8: For future actions, require a full reclamation bond specific to the site in accordance with 43 CFR 3104.2, 3104.3, and 3104.5. Insure bonds are sufficient for costs relative to reclamation (Connelly et al. 2000a; Hagen et al. 2007) that would result in full restoration of the lands to the condition it was found prior to disturbance. Base the reclamation costs on the assumption that contractors for the BLM would perform the work.</p>	<p>Conservation Measure C-MLS 8: Same as Alternative A.</p>	<p>Conservation Measure D-MLS 8: Same as Alternative B.</p>	<p>Conservation Measure E-MLS 8: —</p>	<p>Conservation Measure F-MLS 8: Same as Alternative B.</p>
<p>Conservation Measure B-MLS 9: Make BMPs in NTT Report Appendix D (BMPs for Fluid Mineral Development) required (Appendix C, Required Design Features for Alternatives B, C, D, and F).</p>	<p>Conservation Measure C-MLS 9: Same as Alternative B.</p>	<p>Conservation Measure D-MLS 9: Same as Alternative B.</p>	<p>Conservation Measure E-MLS 9: —</p>	<p>Conservation Measure F-MLS 9: Same as Alternative B.</p>
<p>Action B-MLS 2: —</p>	<p>Action C-MLS 2: Same as Alternative A.</p>	<p>Action D-MLS 2: —</p>	<p>Action E-MLS 2: —</p>	<p>Action F-MLS 2: Prohibit the construction of evaporation or infiltration reservoirs to hold coalbed methane wastewater.</p>
<p>Action B-MLS 3: —</p>	<p>Action C-MLS 3: Agencies would explore options to amend, cancel, or buy out leases in ACECs and occupied habitats.</p>	<p>Action D-MLS 3: —</p>	<p>Action E-MLS 3: —</p>	<p>Action F-MLS 3: —</p>

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Action B-MLS 4: —	Action C-MLS 4: Include conditions that require relinquishment of leases/authorizations if doing so would: <ol style="list-style-type: none"> mitigate the impact of a proposed development mitigate the unanticipated impacts of an approved development. 	Action D-MLS 4: —	Action E-MLS 4: —	Action F-MLS 4: —
Action B-MLS 5: —	Action C-MLS 5: —	Action D-MLS 5: —	Action E-MLS 5: Appropriate set-back distances (thresholds) regarding density (number of units per area), size (total area disturbed), and noise levels of energy developments need examination to determine what the effects are on GRSG. Until better information is available, managers should err on the side of the birds' biology and use the greatest set-back distance where feasible and necessary.	Action F-MLS 5: —
Leasable Minerals – Unleased Federal Fluid Mineral Estate (MLS)				
Action B-MLS 6: Close PPMA to fluid mineral leasing. Consider an exception when there is an opportunity for the BLM to influence conservation measures where surface or mineral ownership is not entirely federal (i.e., checkerboard ownership). In this case, a plan amendment may be developed that opens the PPMA for new leasing. The plan must demonstrate long-term population increases in the PPMA through mitigation (prior to issuing the lease) including lease stipulations, off-site mitigation, etc., and avoid short-term losses that put the GRSG population at risk from stochastic events leading to extirpation.	Action C-MLS 6: Issue no new leases or permits. (Includes PPMA and PGMA.)	<p>Action D-MLS 6: Areas outside GRSG PPMA but within 1 mile of an occupied lek, if the lek is located within PPMA, would be open to leasing fluid minerals, subject to NSO stipulations.</p> <p>PPMA within 4 miles of an occupied lek, if the lek is located within PPMA, would be designated as open to fluid mineral leasing subject to NSO stipulations.</p> <p>PPMA beyond 4 miles of an occupied lek, if the lek is located within PPMA, would be designated as open to fluid mineral leasing subject to CSU stipulations (see list below) and the following TL stipulations:</p> <ol style="list-style-type: none"> March 1 to June 30: Breeding (includes lek, nesting, and early brood rearing) July 1 - September 30: Late Brood Rearing October 1 - February 28: Wintering <p>Where leasing/development is allowed within PPMA, development could occur if it adhered to the following controlled surface use stipulations:</p>	<p>Action E-MLS 6: Recommend no development in Core Areas if habitat classifications determine 1) the habitats are those upon which GRSG depend, and 2) the site-specific habitat is both essential and irreplaceable.</p> <p>Use guidance provided by Core Area approach in Mitigation Framework for Sage-Grouse Habitats (ODFW 2012b or subsequent version) for siting developments. Use Fish and Wildlife Habitat Mitigation Policy (ODFW 2012a or subsequent version) to avoid, minimize, and mitigate impacts on GRSG habitat.</p>	<p>Action F-MLS 6: Upon expiration or termination of existing leases, do not accept nominations/expressions of interest for parcels within occupied habitat.</p> <p>Close occupied sage-grouse habitat areas to fluid mineral leasing. Consider an exception:</p> <p>When there is an opportunity for the BLM to influence conservation measures where surface or mineral ownership is not entirely federal (i.e., checkerboard ownership). In this case, a plan amendment may be developed that opens GRSG habitat for new leasing. The plan must demonstrate long-term population increases in the PPMA through mitigation (prior to issuing the lease) including lease stipulations and off-site mitigation, and avoid short-term losses that put the sage-grouse population at risk from stochastic events leading to extirpation.</p>

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Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<div><div><div>1. The development meets noise restrictions (noise at occupied leks does not exceed 10 decibels above ambient sound levels from 2 hours before to 2 hours after sunrise and sunset during breeding season).</div><div>2. The development meets tall structure restrictions (a tall structure is any structure that has the potential to disrupt lekking or nesting birds by creating new perching/nesting opportunities and/or decrease the use of an area; a determination as to whether something is considered a tall structure would be determined based on local conditions such as vegetation or topography).</div><div>3. Operators must submit a site-specific plan of development for roads, wells, pipelines, and other infrastructure prior to any development being authorized. This plan should outline how development on the lease would limit habitat fragmentation.</div><div>4. The development does not exceed the 3% disturbance limit.</div></div><div><div>Areas outside PPMA and within 4 miles of an occupied lek, if the lek is located within PPMA, would be designated as open to fluid mineral leasing subject to CSU stipulations. Development in these areas could occur if it adhered to the following controlled surface use stipulations:</div><div><div>1. The development meets noise restrictions (noise at occupied leks does not exceed 10 decibels above ambient sound levels from two hours before to two hours after sunrise and sunset during breeding season).</div><div>2. The development meets tall structure restrictions (a tall structure is any structure that has the potential to disrupt lekking or nesting birds by</div></div></div></div>		

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Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<p>creating new perching/nesting opportunities and/or decrease the use of an area; a determination as to whether something is considered a tall structure would be determined based on local conditions such as vegetation or topography).</p> <p>The design features identified in Appendix D (of the NTT report) would be attached as lease notices to all new leases in PPMA and would be applied as technically feasible during the permitting process unless doing so would not be beneficial to GRSG.</p> <p>A minimum lease size of 640 contiguous acres of federal mineral estate would be applied within PPMA. Smaller parcels may be leased only when 640 contiguous acres of federal mineral estate is not available and leasing is necessary to remain in compliance with laws, regulations and policy (e.g., to protect the federal mineral estate from drainage or to commit the federal mineral estate to unit or communitization agreements.)</p>		
Action B-MLS 7: —	Action C-MLS 7: —	<p>Action D-MLS 7: For unleased fluid minerals within PGMA: Areas within 1 mile of an occupied lek, if the lek is located within PGMA, whether the area is in occupied or unoccupied GRSG habitat, would be open to leasing fluid minerals, subject to NSO stipulations.</p> <p>PGMA beyond 1 mile of an occupied lek, if the lek is located within PGMA, would be designated as open to fluid mineral leasing subject to controlled surface use stipulations (see list below) and the following timing stipulations:</p> <ol style="list-style-type: none"> 1. March 1 to June 30: Breeding (includes lek, nesting and early brood rearing) 2. July 1 - September 30: Late Brood Rearing 3. October 1 - February 28: Wintering 	Action E-MLS 7: —	<p>Action F-MLS 7: Close occupied sage-grouse habitat areas to fluid mineral leasing. Consider an exception:</p> <p>When there is an opportunity for the BLM to influence conservation measures where surface or mineral ownership is not entirely federal (i.e., checkerboard ownership). In this case, a plan amendment may be developed that opens GRSG habitat for new leasing. The plan must demonstrate long-term population increases in the PPMA through mitigation (prior to issuing the lease) including lease stipulations and off-site mitigation, and avoid short-term losses that put the sage-grouse population at risk from stochastic events leading to extirpation.</p>

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<p>Where leasing/development is allowed within PGMA, development could occur if it adhered to the following controlled surface use stipulations:</p> <ol style="list-style-type: none">1. The development meets noise restrictions (noise at occupied leks does not exceed 10 decibels above ambient sound levels from 2 hours before to 2 hours after sunrise and sunset during breeding season).2. The development meets tall structure restrictions (a tall structure is any man-made structure that has the potential to disrupt lekking or nesting birds by creating new perching/nesting opportunities and/or decrease the use of an area; a determination as to whether something is considered a tall structure would be determined based on local conditions such as vegetation or topography). <p>PGMA within and beyond the 1.0 mile NSO area would require coordination with ODFW during project implementation, and implementation of best management practices (e.g., anti-perch devices for raptors).</p> <p>The design features identified in Appendix D (of the NTT report) would be attached as lease notices to all new leases in PGMA and would be applied as technically feasible during the permitting process unless doing so would not be beneficial to GRSG.</p> <p>The stipulations within PGMA (closure or restrictions) could be waived, except for the seasonal stipulations, if off-site mitigation coordinated with BLM and ODFW is successfully completed in PPMA or opportunity areas.</p>		
Action B-MLS 8: —	Action C-MLS 8: Issue no new geophysical exploration permits in PPMA and PGMA.	Action D-MLS 8: Allow geophysical exploration within occupied sage-grouse habitat areas to obtain exploratory	Action E-MLS 8: —	Action F-MLS 8: Allow geophysical exploration within occupied sage-grouse habitat areas to obtain exploratory

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		information. Geophysical exploration shall be subject to seasonal restrictions that preclude activities in breeding, nesting, brood rearing and winter habitats during their season of use by GRSG.		information for areas outside of and adjacent to occupied sage-grouse habitat areas. Only allow geophysical operations by helicopter-portable drilling methods and in accordance with seasonal timing restrictions or other restrictions that may apply. Geophysical exploration shall be subject to seasonal restrictions that preclude activities in breeding, nesting, brood rearing, and winter habitats during their season of use by GRSG.
Action B-MLS 9: —	Action C-MLS 9: Same as Alternative A.	Action D-MLS 9: —	Action E-MLS 9: —	Action F-MLS 9: Close occupied sage-grouse habitat areas to fluid mineral leasing. Consider an exception: When there is an opportunity for the BLM to influence conservation measures where surface or mineral ownership is not entirely federal (i.e., checkerboard ownership). In this case, a plan amendment may be developed that opens GRSG habitat for new leasing. The plan must demonstrate long-term population increases in the PPMA through mitigation (prior to issuing the lease) including lease stipulations and off-site mitigation, and avoid short-term losses that put the sage-grouse population at risk from stochastic events leading to extirpation.
Action B-MLS 10: Allow geophysical exploration within PPMA to obtain exploratory information for areas outside of and adjacent to PPMA. Only allow geophysical operations by helicopter-portable drilling methods and in accordance with seasonal timing restrictions or other restrictions that may apply.	Action C-MLS 10: Same as Alternative A.	Action D-MLS 10: —	Action E-MLS 10: —	Action F-MLS 10: Allow geophysical exploration within occupied sage-grouse habitat areas to obtain exploratory information for areas outside of and adjacent to PPMA. Only allow geophysical operations by helicopter-portable drilling methods and in accordance with seasonal timing restrictions or other restrictions that may apply. Geophysical exploration shall be subject to seasonal restrictions that preclude activities in breeding, nesting, brood rearing and winter habitats during their season of use by GRSG.
Locatable Minerals (MLM)				
Action B-MLM 1: In PPMA, recommend withdrawal from mineral entry based on risk to the GRSG and its habitat from conflicting locatable mineral potential and development. 1. Make any existing claims within the	Action C-MLM 1: Recommend withdrawals for all occupied habitat.	Action D-MLM 1: Same as Alternative A. To the extent consistent with the rights of a mining claimant under existing laws and regulations, limit surface disturbance and provide recommendations that would limit	Action E-MLM 1: Same as Alternative B, unless non-habitat.	Action F-MLM 1: Same as Alternative B.

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
<p>withdrawal area subject to validity exams or buy out. Include claims that have been subsequently determined to be null and void in the recommended withdrawal.</p> <p>2. In plans of operations required prior to any proposed surface disturbing activities, include the following:</p> <p>a. Additional, effective mitigation in perpetuity for conservation (In accordance with existing policy, WO IM 2008-204). Example: purchase private land and mineral rights or severed subsurface mineral rights within the PPMA and deed to US Government).</p> <p>b. Consider seasonal restrictions if deemed effective.</p>		<p>surface disturbance.</p>		
<p>Action B-MLM 2: Recommend implementation of BMPs in NTT Report Appendix E (BMPs for Locatable Mineral Development) (Appendix D, Best Management Practices for Alternatives B, C, D, and F).</p>	<p>Action C-MLM 2: Same as Alternative B.</p>	<p>Action D-MLM 2: If a 3809 Plan of Operation is filed on mining claims in PPMA or PGMA, consider requiring, through the NEPA process, additional mitigation measures to avoid or minimize adverse effects on sage-grouse habitat, as appropriate and to the extent allowable by law. For Notice and Casual Use levels of activity, recommend voluntary application of Best Management Practices in NTT Report Appendix D.</p>	<p>Action E-MLM 2: —</p>	<p>Action F-MLM 2: Same as Alternative B.</p>
<p>Action B-MLM 3: In PPMA, do not recommend withdrawal proposals not associated with mineral activity unless the land management is consistent with GRSG conservation measures. (For example; in a proposed withdrawal for a military training range buffer area, manage the buffer area with GRSG conservation measures.)</p>	<p>Action C-MLM 3: Same as Alternative A.</p>	<p>Action D-MLM 3: —</p>	<p>Action E-MLM 3: —</p>	<p>Action F-MLM 3: Do not approve withdrawal proposals not associated with mineral activity unless the land management is consistent with sage-grouse conservation measures. (For example, in a proposed withdrawal for a military training range buffer area, manage the buffer area with sage-grouse conservation measures that have been demonstrated to be effective.)</p>
<p>Mineral Materials (Salables) (MSM)</p>				
<p>Action B-MSM 1: Close PPMA to mineral material sales.</p>	<p>Action C-MSM 1: Close all occupied habitats to mineral materials sales.</p>	<p>Action D-MSM 1: Close PPMA to development of new mineral sites. Existing permitted sites would not be closed, but reclaimed upon exhaustion of resource.</p>	<p>Action E-MSM 1: Same as Alternative B, unless non-habitat.</p>	<p>Action F-MSM 1: Same as Alternative B.</p>

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Action B-MSM 2: In PPMA, restore salable mineral pits no longer in use to meet GRSG habitat conservation objectives.	Action C-MSM 2: Same as Alternative A.	Action D-MSM 2: Same as Alternative B	Action E-MSM 2: —	Action F-MSM 2: Same as Alternative B.
Nonenergy Leasable Minerals (MNL)				
Action B-MNL 1: Close PPMA to nonenergy leasable mineral leasing. This includes not permitting any new leases to expand an existing mine.	Action C-MNL 1: Close all occupied habitat to nonenergy mineral leasables.	Action D-MNL 1: Nonenergy leasable mineral leases are subject to an NSO stipulation in PPMA. Consider only underground development options with entry outside PPMA and occupied sites found in PGMA.	Action E-MNL 1: Close to non-energy mineral leasing unless determined to be non-habitat.	Action F-MNL 1: Same as Alternative B.
Action B-MNL 2: For existing nonenergy leasable mineral leases in PPMA, in addition to the solid minerals BMPs (NTT Report Appendix E, BMPs for Locatable Mineral Development), follow the same RDFs applied to Fluid Minerals (NTT Report Appendix D, BMPs for Fluid Mineral Development), when wells are used for solution mining (Appendix C , Required Design Features for Alternatives B, C, D, and F, and Appendix D , Best Management Practices for Alternatives B, C, D, and F).	Action C-MNL 2: Same as Alternative B.	Action D-MNL 2: For existing nonenergy leasable mineral leases in PPMA, in addition to the solid minerals BMPs (NTT Report Appendix E, BMPs for Locatable Mineral Development), follow the same RDFs applied to Fluid Minerals (NTT Report Appendix D, BMPs for Fluid Mineral Development), when wells are used for solution mining (Appendix C , Required Design Features for Alternatives B, C, D, and F, and Appendix D , Best Management Practices for Alternatives B, C, D, and F). Where it is determined in the public interest that a lease in habitat area should be relinquished, pursue lease exchanges.	Action E-MNL 2: —	Action F-MNL 2: Same as Alternative B.
Mineral Split Estate (MSE)				
Action B-MSE 1: Where the federal government owns the mineral estate in PPMA, and the surface is in non-federal ownership, apply the same conservation measures as applied on BLM-administered lands.	Action C-MSE 1: Same as Alternative A.	Action D-MSE 1: Same as Alternative B	Action E-MSE 1: Use guidance provided by Core Area approach in Mitigation Framework for Sage-Grouse Habitats (ODFW 2012b or subsequent version) for siting developments. Use Fish and Wildlife Habitat Mitigation Policy (ODFW 2012a or subsequent version) to avoid, minimize, and mitigate impacts on sage-grouse habitat.	Action F-MSE 1: Same as Alternative B.
Action B-MSE 2: Where the federal government owns the surface, and the mineral estate is in non-federal ownership in PPMA, apply appropriate Fluid Mineral RDFs (NTT Report Appendix D, BMPs for Fluid Mineral Development) to surface development (Appendix C , Required Design Features for Alternatives B, C, D, and F).	Action C-MSE 2: Same as Alternative B.	Action D-MSE 2: Same as Alternative B	Action E-MSE 2: Use guidance provided by Core Area approach in Mitigation Framework for Sage-Grouse Habitats (ODFW 2012b or subsequent version) for siting developments. Use Fish and Wildlife Habitat Mitigation Policy (ODFW 2012a or subsequent version) to avoid, minimize, and mitigate impacts on sage-grouse habitat.	Action F-MSE 2: Same as Alternative B.

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Special Designations (SD) – Areas of Critical Environmental Concern (ACEC)				
<p>Action B-SD I: —</p>	<p>Action C-SD I: Designate all of GRSG PPMA as new ACECs.</p> <p>Manage ACECs for GRSG conservation.</p> <p>Designate new ACECs in all of PPMA to preserve, protect, conserve, restore, and sustain GRSG populations and the sagebrush ecosystem on which the GRSG relies.</p> <p>Prepare new ACEC management plans within 5 years, addressing the necessary management actions to conserve resource values and needs of GRSG and sagebrush habitat.</p>	<p>Action D-SD I: For the identified existing ACECs and RNAs (Appendix G, Greater Sage-Grouse Monitoring Framework), that are important for GRSG and sagebrush habitat, update and revise management plans within 10 years, addressing site-specific activities and management of the relevant and important values, including sage-grouse, as funding allows.</p> <p>In addition to the resource values for which they were originally designated, identify and manage for GRSG all existing ACECs and RNAs occurring in over 20% PPMA acres and/or 50% PGMA of GRSG habitat. (Appendix I, GRSG Habitat Density in Areas of Critical Environmental Concern).</p> <p>Reduce, modify or eliminate vegetation impacts and fragmentation from OHVs, ROWs, authorized livestock grazing, locatable and salable mineral authorizations, special use permits, and other actions that reduce habitat suitability for GRSG within identified ACECs and RNAs.</p> <p>For identified RNAs, allow natural processes to predominate with minimal human impact or intervention. However, respond to catastrophic disturbances in a way that meets long-term goals for the RNA, natural processes, the plant community cell, and the needs of the greater GRSG.</p> <p>For rights-of-way, allow no new ROWs in identified ACECs and RNAs, including new energy developments, pipelines and energy corridors.</p> <p>A ROW access authorization to inholdings within ACECs maybe authorized if there is no other reasonable access. Allow maintenance access for existing ROWs and facilities with ACECs.</p>	<p>Action E-SD I: —</p>	<p>Action F-SD I: Designate 17 Areas of Critical Environmental Concern (ACECs) to conserve GRSG and other sagebrush-dependent species (Appendix J, Areas of Critical Environmental Concern Evaluation for Greater Sage-Grouse). Prepare new ACEC management plans within 5 years, addressing the necessary management actions to conserve resource values and needs of GRSG and sagebrush habitat.</p>

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<p>Work with public holders of existing valid rights and Rights-of-Way holders to address conservation of GRSG, the values that the ACEC was designated, and the maintenance and protection of RNA plant community cells.</p> <p>Reduce, limit to existing/designated roads, or close all OHV use in identified ACECs within GRSG habitat. Close all identified RNAs to OHV use</p> <p>For identified ACECs, work with grazing permit holders to modify the grazing system, adjust the timing, duration and intensity, AUMs, or relinquish grazing allotments, if needed (or if grazing management is not currently meeting standards), if necessary to benefit ACEC values and the sage-grouse.</p> <p>In RNAs, work with grazing permit holders to voluntarily relinquish permits, and/or terminate grazing leases if necessary to protect RNA values.</p> <p>Remove un-needed infrastructure (corrals, fences, and water developments) unless they are needed to protect the ACEC/RNA values.</p> <p>Within ACECs and RNAs, establish replicated, statistically valid monitoring of the resource values, as well as regular inventories and early detection and rapid response programs for noxious weeds.</p> <p>Within RNAs, the replicated, statistically valid vegetation monitoring would serve as reference baseline condition for monitoring in managed areas (including other ACECs), to document shifts in vegetation in the absence of anthropogenic disturbance (including grazing), and vegetation change attributed to climate change, and to research GRSG vegetative needs and ecosystem</p>		

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<p>processes, and other research questions. Annually provide the results of monitoring in ACECs and RNAs to USFWS, ODFW, partners and the public. Follow wildlife guidelines on building fences within close proximity to an active lek.</p> <p>Use intentional fuels, vegetation and prescribed burning treatments to protect identified ACECs and RNAs from large scale catastrophic fire and to maintain or improve the ACEC resource values, plant communities and ecosystem processes on which GRSG depend, so long as the treatments do not detract from the values and the long-term goals that the ACEC and RNAs were designated.</p> <p>Prioritize fire suppression to keep wildfire from burning ACECs in GRSG habitat, following specific tactics outlined in ACEC/RNA and fire management plans. Use all fire-suppression techniques to suppress fires within ACECs, with consideration to minimize affects to the values that the ACEC was designated. Do not place fire camps and major staging areas within ACECs.</p> <p>For identified RNAs, use minimal impact fire suppression tactics, similar to fire management on WSAs, including hand lines, power tools, and fire retardant and aircraft as necessary. However, depending on existing fire behavior and fire risk, threats to life and private lands, BLM line officers may authorize more aggressive and ground disturbing activities, including the use of earth moving equipment.</p> <p>Within and adjacent to ACECs and RNAs, treat noxious and invasive species that threaten GRSG habitat using manual and herbicide (including aerial) methods. Utilize native grass and forb species for rehabilitation or restoration activities within all identified ACECs and RNAs when</p>		

Table 2-6
Detailed Comparison of Action Alternatives by BLM Resource Program

Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		needed. Allow passive nonpermitted activities such as hiking, bird watching, hunting, fishing, wildlife observation, and photography in ACECs and RNAs as long as there are no impacts on GRSG or the ACEC values. Close RNAs to public use if such use is determined to be incompatible with primary values of the RNA including GRSG.		
Special Status Plants (SSP)				
Action B-SSP 1: —	Action C-SSP 1: —	Action D-SSP 1: Coordinate with USFWS, Oregon State Department of Agriculture, ODFW, Oregon Biodiversity Information Center, and other organizations on special status species conservation efforts, development of conservation assessments, agreements, and strategies to recover listed species and prevent federal listing for BLM sensitive species	Action E-SSP 1: —	Action F-SSP 1: —
Action B-SSP 2: —	Action C-SSP 2: —	Action D-SSP 2: Maintain current inventories of BLM-administered lands for special status species to document the presence, the condition, and how discretionary BLM actions affect the species.	Action E-SSP 2: —	Action F-SSP 2: —
Action B-SSP 3: —	Action C-SSP 3: —	Action D-SSP 3: Develop provisions and mitigation measures at the project scale to conserve and manage special status species from BLM actions	Action E-SSP 3: —	Action F-SSP 3: —
Action B-SSP 4: —	Action C-SSP 4: —	Action D-SSP 4: Monitor populations of Bureau Special Status Species to ensure that management objectives are met	Action E-SSP 4: —	Action F-SSP 4: —

Note: In some cells, there is a “—” as a placeholder that indicates that there is no similar action to the other alternatives, or that the similar action is reflected in another portion of the alternative.

2.10 SUMMARY ENVIRONMENTAL CONSEQUENCES

Management actions across the range of alternatives would result in more, less, or equivalent impacts on GRSG habitat and applicable resource program areas. **Table 2-7**, Summary of Environmental Consequences, summarizes and compares the impacts of management actions across alternatives.

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Greater Sage-Grouse and Sage-Grouse Habitat					
<p>Alternative A (current management) protects GRSG habitat in the planning area through existing land use plans, which vary in their levels of protection for sagebrush, allowing for differing interpretations over time and creating uncertainty about reducing the threats to habitat.</p> <p>For fire management, Alternative A relies on older land use plans that lack clear desired conditions, allowing for disparate interpretations to guide use of fire and fuels management to preserve sagebrush-steppe habitat and connectivity.</p>	<p>Alternative B applies guidance from the NTT report for protection of GRSG habitat, but lacks specificity for sub-regional conditions. It would apply a 3% disturbance cap to all surface disturbance in PPMA. If exceeded, no further surface disturbance could occur until restoration has taken place. .</p> <p>Alternatives A, B, D, and F provide similar guidance with respect to conifer expansion. Whether these alternatives' actions would treat conifer expansion at an adequate rate to</p>	<p>Alternative C also applies protection to GRSG habitat using guidance derived from the NTT report but applied across all occupied habitat. Alternative C includes a zero percent surface disturbance limit in PPMA.</p> <p>Alternative C would bar grazing in occupied habitat in order to protect GRSG nesting and foraging habitat. Alternative C also focuses on passive restoration techniques. These approaches may increase weed spread and fuel buildup, resulting in habitat degradation for GRSG over time.</p>	<p>Alternative D increases the consistency of approach by providing more specific guidance, with stronger measures and more management flexibility to achieve the most protection for GRSG habitat. It would also apply a 3% disturbance cap to all surface disturbance in PPMA.</p> <p>Alternative D allows the widest range of techniques for fire control. Unplanned fire to meet habitat objectives is permitted. However, Alternative D still carries a risk of habitat loss and fragmentation because treatment efficacy has not been established</p>	<p>Alternative E provides more specific management direction than Alternatives B, C, and F, but with more limited conservation measures than Alternative D.</p> <p>For fire management, Alternative E is more likely to be effective than Alternatives B, C, or F because it allows for treating sagebrush to create mosaics, though its approach is generally more limited than under Alternative D.</p> <p>Alternative E places strict limits on the ability to treat juniper; thus, it is likely to fail to treat juniper at its rate of expansion, thereby</p>	<p>Alternative F protects GRSG habitat similarly to Alternatives B and C, using non-specific guidance, which could make Alternative F difficult to apply consistently across plans. Alternative F would also apply a 3% disturbance cap to all surface disturbance in PPMA, but would include fire within the 3% limit.</p> <p>Alternative F would limit, but not bar, grazing in GRSG habitat. This approach would reduce harm to GRSG nesting</p>

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
<p>For conifer expansion, Alternatives A, B, D, and F provide similar guidance. Whether these alternatives' actions would treat conifer expansion at an adequate rate to maintain existing GRSG habitat and avoid fragmentation and increased predation would depend on funding.</p> <p>Current management controls invasive plants in GRSG habitat using Integrated Vegetation Management. This policy would remain in place for all alternatives.</p> <p>Alternative A has low probability of adjusting grazing management to maintain GRSG habitat from degradation due to the lack of direction in the older land use plans.</p> <p>For lands and realty, Alternative A would allow development in</p>	<p>control juniper at its rate of expansion and maintain existing GRSG habitat would depend on funding.</p> <p>Alternative B improves focus on rangeland health in GRSG habitat areas, but has unclear management direction, resulting in a low probability of adjusting grazing management to maintain GRSG habitat from degradation.</p> <p>For lands and realty, Alternative B would establish ROW exclusion areas in PPMA and avoidance areas in PGMA. Exclusion areas would protect GRSG on BLM-administered land but may push ROW development onto adjacent private land,</p>	<p>The extent of juniper may increase over time with Alternative C's focus on passive restoration of habitat, which would reduce GRSG habitat extent and connectivity, especially in late brood-rearing habitat.</p> <p>Alternative C would establish ROW exclusion areas in PPMA and avoidance areas in PGMA. Exclusion areas would protect GRSG on BLM-administered land but could push ROW development onto adjacent private land, with fewer land use restrictions.</p> <p>For leasable and salable minerals, Alternative C would close all PPMA to new mineral leases. It would be more effective at protecting GRSG habitat on BLM-administered land from mining because it closes</p>	<p>and treatment rates may be insufficient.</p> <p>Alternative D has the most explicit treatment priorities for conifer expansion. Whether these activities would treat conifer expansion at an adequate rate to maintain existing GRSG habitat and connectivity would depend on funding.</p> <p>Alternative D provides the clearest guidance on grazing management in GRSG habitat, resulting in the highest likelihood of adjusting grazing management to meet GRSG habitat needs.</p> <p>Alternative D limits OHVs to existing routes in PPMA. However, it does not seasonally close roads, allowing for potential disturbance of breeding GRSG.</p>	<p>reducing GRSG habitat acreage and connectivity.</p> <p>Alternative E is less likely to adjust grazing management to meet GRSG habitat needs, largely because assessments are not prioritized.</p> <p>Alternative E would establish ROW exclusion areas in PPMA and avoidance areas in PGMA. Exclusion areas would protect GRSG on BLM-administered land but could push ROW development onto adjacent private land, with fewer land use restrictions.</p> <p>Alternative E provides for road closures during nesting season to protect GRSG from travel and recreation impacts.</p> <p>Alternative E also relies on discretionary</p>	<p>habitat but has a low probability of adjusting grazing management to meet GRSG habitat needs due to non-specific management direction.</p> <p>Alternative F would establish ROW exclusion areas in PPMA and avoidance areas in PGMA. Exclusion areas would protect GRSG on BLM-administered land but could push ROW development onto adjacent private land, with fewer land use restrictions.</p> <p>For road closures, Alternative F does not seasonally close roads in GRSG habitat, allowing for potential disturbance of breeding GRSG.</p> <p>For leasable and</p>

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
<p>existing corridors that have been established in location to minimize impacts on wildlife habitat.</p> <p>For road closures, Alternatives A does not seasonally close roads in GRSG habitat, allowing for potential disturbance of breeding GRSG.</p> <p>Alternative A would be less effective in avoiding new mining activities and any associated facilities within occupied habitats, because it relies on discretionary actions by the BLM and mining operators.</p>	<p>with fewer land use restrictions.</p> <p>For road closures, Alternative B does not seasonally close roads in GRSG habitat, allowing for potential disturbance of breeding GRSG.</p> <p>For leasable and salable minerals, Alternative B would close all PPMA to new mineral leases and apply a 3-percent maximum disturbance cap in PPMA. This approach would be more effective at protecting GRSG habitat from mining on BLM-administered land than discretionary actions.</p>	<p>habitat areas to mineral leasing and development.</p>	<p>Alternative D also relies on discretionary actions, a less effective approach in avoiding new mining activities and associated habitat degradation; however, a 3-percent maximum disturbance cap would be imposed to limit disturbance within PPMA.</p> <p>Alternative D would establish avoidance areas for ROWs in PPMA but would not establish exclusion areas. Alternative D's flexible approach may be most effective in protecting GRSG habitat.</p>	<p>actions, a less effective approach in avoiding new mining activities and associated habitat degradation within occupied habitats.</p>	<p>salable minerals, Alternative F would close all PPMA to new mineral leases and apply a maximum 3-percent disturbance cap in PPMA. Alternative F would be more effective at protecting GRSG habitat from mining on BLM-administered land because it closes habitat areas to mineral leasing and development.</p>
Vegetation					
Alternative A provides the least protection for vegetation communities in the planning area. It	Alternative B provides more protection for vegetation than	Management under Alternative C would focus on removing livestock grazing from	Alternative D would provide more protection for vegetation than	Impacts from Alternative E are similar to those for Alternative D. In addition,	Impacts from Alternative F would be similar to those described for

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
<p>puts very few restrictions on development. This could reduce the acreage and condition of native vegetation, increase the spread or cover of noxious weeds and invasive species, and reduce special status plant populations.</p> <p>Impacts from current allocations and resource uses would continue. This would lead to a continued decrease in the acres and condition of native vegetation communities, an increase in conifer encroachment, noxious weed and invasive annual grass spread and density, reduced acres and condition of riparian and wetland areas, and number and size of special status plant populations.</p> <p>Vegetation treatments would continue in some</p>	<p>Alternative A, but it would provide less protection than Alternatives C and F.</p> <p>Alternative B would restrict resource uses within PPMA and PGMA, by implementing a 3% disturbance cap, designating ROW avoidance and exclusion areas, and eliminating mineral leasing for example. Such restrictions would protect existing native vegetation, riparian and wetland areas, and special status plant populations. Restrictions would also reduce the likelihood for noxious weeds or invasive annual grass spread.</p> <p>Alternative B would also provide guidance and</p>	<p>occupied habitats and would implement a 0% disturbance cap, with most other management being similar to Alternative A. As such, impacts from livestock grazing would be removed and impacts from surface disturbing activities would be greatly reduced.</p>	<p>Alternative A, but it would provide less protection than Alternatives B, C and F. More flexibility is built into Alternative D to account for sub-regional conditions. This could allow for more development and thus more impacts on vegetation than Alternatives B, C, and F.</p> <p>Impacts from Alternative D are similar to those described for Alternative B, but with increased flexibility in decision making and slightly reduced restrictions on uses. As a result, impacts would be reduced, compared to Alternative A, but not to the same extent as Alternative B.</p>	<p>Alternative E would require no net loss of sagebrush. As a result, Alternative E would provide more protection to vegetation than Alternative D.</p>	<p>Alternative B. The greatest restrictions would be placed on development, and the 3% disturbance cap would include fire, thus reducing the amount of anthropogenic disturbances that would be allowed. This would afford the most protection and opportunity for improvement to vegetation and special status plant populations and the most reduction in the spread or cover of noxious weeds, invasive species, and conifer encroachment.</p>

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
areas, thus providing improved vegetation conditions.	prioritization for vegetation treatments and GRSG habitat restoration, thereby improving the condition and extent of native vegetation and habitat conditions for some special status plants. It also would reduce conifer encroachment and noxious weed and invasive annual grass spread.				
Fish and Wildlife					
Impacts on special status wildlife species would continue and likely would decrease habitat quality, quantity, and protection in the long term. Implementing management for general fish and wildlife, big game, and migratory birds discussed in Section 3.4, Fish and	The designation of PPMA's and PGMA's would increase quality and protection for special status wildlife species' habitats that overlap occupied GRSG habitat.	Impacts on special status wildlife species are the same as Alternative B. In addition, proper and improper livestock grazing management would be eliminated. This action could require the implementation of structural range improvements including	Impacts on special status wildlife species are the same as Alternative B. In addition, comprehensive wildland fire management would provide specific direction for implementing protective measures in areas prone to fire.	Managing occupied GRSG habitat as Core Areas would increase quality and protection for special status wildlife species' habitats that overlap occupied GRSG habitat. GRSG management of Low Density habitat would provide less protection for special status wildlife habitat in	Impacts on special status wildlife species are the same as Alternative B. In addition, livestock grazing management would close 25% of PPMA and PGMA to grazing, compared to the No Action Alternative, in which less than 1% is closed. These

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Wildlife, would have negligible or no impacts on those resources and are not addressed in the Fish and Wildlife analysis.		fences and other exclosures to protect GRSG habitat as identified in the NTT report. This could lead to an increase in habitat fragmentation as a result of increased fencing to exclude livestock grazers, thereby resulting in effects on special status wildlife species.	Livestock grazing management would focus rangeland enhancement on lands in need of improvement. Approximately 4.3 million acres of BLM ROWs would be managed as avoidance areas. This would allow impacts on special status wildlife species to occur from development.	those areas, compared to the No Action Alternative. Vegetation management actions would increase the availability of water in GRSG habitat and for special status wildlife that occupy those areas.	actions would reduce impacts from proper and improper grazing management on special status wildlife. Fencing and habitat fragmentation would increase, in comparison to Alternative A, as a result of grazing management.
Wild Horse and Burros					
Under Alternative A, wild horse and burro management would be determined by management in current RMPs in the planning area. Funding and priority for management is determined by national level priorities and land health considerations.	Under Alternative B, wild horse and burro gathers would be prioritized in those HMAs that overlap PPMA. This could reduce funding for or ability to manage populations on HMAs outside of PPMA. However, provisions under this plan would allow for exceptions for herd health, thereby	Under Alternative C, management in the planning area would be similar to that for current conditions for many resources and resource uses. Closing GRSG habitat to permitted livestock grazing is an exception; this could increase forage availability for wild horses and burros and increase the ability to manage AMLs.	Under Alternative D, management practices or AMLs may require modification in order to meet GRSG objectives in PPMA and PGMA. In addition, management of HMAs within GRSG habitat would be emphasized and impacts could occur on HMAs outside of GRSG habitat should limited resources for	Under Alternative E, management agencies would be strongly encouraged to prioritize funding for wild horse gathers in GRSG areas that are over AML. As a result, funding and resources for areas outside of GRSG habitat could be reduced, with impacts on the ability to meet AMLs and corresponding land health in these areas.	Under Alternative F, a proposed 25% reduction in AMLs in GRSG habitat would dramatically increase the costs of management for the wild horse and burro program, as additional gathers and/or fertility control treatments would be required. In addition, a similar reduction in

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	<p>limiting impacts. Modifying watering sites to conserve GRSG habitat could reduce water availability. This could require reducing wild horse and burro numbers within an HMA. Limiting other resource uses, such as travel, recreation, and mineral development, could reduce any disturbance of wild horses and burros.</p> <p>There is a potential for reduction in AMLs if current AML levels are not compatible with GRSG habitat objectives.</p> <p>Priority is given to management of HMAs in PPMA. National level priorities and land health are still factors.</p>	<p>However, the lack of maintenance of water developments as well as removal of some water developments would impact the ability to provide sufficient water for herds and ability to manage for AML. Conversely, removing fences could increase the herds' ability to range, thereby improving habitat for wild horses and burros.</p> <p>There is a potential for reduction in AMLs in the long term if current AML levels are not compatible with GRSG habitat objectives.</p> <p>Priority funding and priority for management are determined by national level priorities and land health considerations.</p>	<p>population control and management be directed to PPMA and PGMA.</p> <p>There is a potential for reduction in AMLs in the long term if current AML levels are not compatible with GRSG habitat objectives.</p> <p>Priority is given to management of HMAs in PPMA and PGMA. National level priorities and land health are still factors.</p>	<p>There is a potential for reduction in AMLs in the long term if current AML levels are not compatible with GRSG habitat objectives.</p> <p>Priority is given to management of HMAs over AML in GRSG habitat. National level priorities and land health are still factors.</p>	<p>permitted livestock grazing in GRSG habitat could increase forage availability for the remaining wild horses and burros. However, prohibiting new water developments and structural improvements in GRSG habitat could limit water availability for wild horses and burros and could impact the ability to manage for AML.</p> <p>Priority is given to management of HMAs in PPMA. National level priorities and land health are still factors.</p>

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Wildland Fire Management					
No PMPH or PMGH would be designated for GRSG under Alternative A. Overall, Alternative A is the least restrictive of the alternatives; therefore, it is the least likely to impact fire management by placing restrictions on how fire management can be executed. However, there would be the highest potential for access to recreation, and energy and minerals development. This could mean a continued risk of human-induced ignition and the need for fire response.	Occupied GRSG habitat would be classified into PPMA and PGMA. Alternative B provides a greater level of protection for vegetation in the PPMA and PGMA. This would retain or improve conditions for wildland fire management within these areas. Use restrictions limiting activities would reduce human-caused fires, fire occurrence, and damage to native vegetation communities. Also, it would minimize the spread of invasive species. Yet, restrictions could also limit wildland fire response and result in higher fuel loads and larger or	Alternative C focuses on removing livestock grazing in GRSG habitat and designating ACECs. Designating PPMA and PGMA and management of minerals and ACECs would have the same impacts as those described for Alternative B. Over 10 million acres would be ROW exclusion under this alternative. This would retain or improve conditions for wildland fire management within these areas, yet it could also limit creation of fire breaks and staging areas as part of development projects. Impacts from other resources or uses are similar to Alternative A. The only exception is for grazing, which would depend on site conditions, including climate, soils, fire history, and disturbance	Alternative D would incorporate more flexibility and adaptive management, including fire management strategies, to account for sub-regional conditions. Restoration of native vegetation and fuel treatments and protection of sagebrush habitat would be emphasized, thereby affecting wildland fire management. Other impacts on fire size, extent, and occurrence and the likelihood of fire associated with human activities are similar to Alternative A. However, impacts from other uses would be reduced through the fire management strategies outlined under Alternative D. Overall, this alternative would implement the	Impacts from Sage-Grouse management, lands, energy, travel, and minerals are the same as those under Alternative B. Management for vegetation and the emphasis on vegetation management would also result in impacts similar to Alternative B. This would be due to retaining or improving conditions for wildland fire management.	Impacts from Alternative F are similar to those for Alternative B. The difference is that Alternative F calls for more stringent guidance and restrictive management in sagebrush ecosystems. This would improve vegetation, reduce the spread or cover of invasive species, and reduce conifer encroachment. This in turn would reduce impacts on wildland fire management, when compared to Alternative B. This alternative is the same as Alternative C for ROW exclusion and impacts from lands and realty to wildland fire

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	more intense fires.	and grazing history.	greatest amount of coordination with other agencies as well as fuel management techniques and would therefore reduce impacts on wildland fire management.		management.
Livestock Grazing/Range Management					
No PMPH or PMGH would be designated for GRSG under Alternative A. Individual RMPs may provide some measures to protect PPH or PGH, but management would vary across the planning area. In general, Alternative A would be the least restrictive on alternative resource uses, including livestock grazing. As a result, permittees and lessees would have a range of management options to support livestock grazing operations. This alternative would also be the least restrictive for other resource uses	Occupied GRSG habitat would be classified into PPMA and PGMA. Impacts, including the potential modification of livestock grazing strategies and related increase in time and cost for permittees, would primarily occur on range management in PPMA, due to restrictions on resource uses in this area.	No livestock grazing would be authorized in occupied GRSG habitat in the planning area. As a result, permittees and lessees would be required to locate alternative sources of forage or to close or reduce livestock grazing operations, with impacts on individual operators as well as the community at large.	A slight reduction in areas open to livestock grazing would occur because some RNAs in PPMA would be closed to livestock grazing. In the specific allotments closed, permittees and lessees would need to locate alternative forage sources and may face financial impacts, as described under Alternative C. Under Alternative D, permit renewal and associated land health assessment would be prioritized first in PPMA for those assessment categories requiring modification.	Management actions would be focused on changes to livestock grazing strategies or permitted use levels. This would be the case only where allotments are not meeting standards or where the level of use is not consistent with existing management direction (existing RMPs). As a result, impacts on livestock grazing management would occur only when these standards are not met. Management for other resources would generally restrict activities that are near	A 25% reduction in GRSG habitat available for livestock grazing would be implemented with impacts, as described in Alternative C, but at a reduced scale. In addition, restrictions would be applied to construction of new water developments and range improvements, and existing improvements may require modifications. As a result, the ability of permittees and lessees to efficiently

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and associated development; therefore, there is an increased chance of disturbance from mineral development, recreation, and other uses on livestock grazing.			<p>As a result, changes to permitted livestock grazing level and grazing systems are more likely to occur in these areas. In the long term, this action could improve rangeland habitat conditions for livestock and wildlife by focusing management on those lands that are most in need of improvement.</p> <p>Under Alternative D, new and existing range improvements would be allowed and modified in order to enhance functionality when livestock are absent. The improvements would be modified to prevent wildlife entrapment. As a result, some developments may be modified; however, the ability to distribute livestock should generally be maintained, and</p>	leks or other sensitive seasonal habitat. Activities that could disturb livestock in these areas may be reduced. Limitations to structural range improvements and the ability to distribute livestock are also most likely to occur in these areas.	distribute livestock and manage for permitted level of use would likely be impacted.

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			impacts on permittees and lessees would be limited.		
Recreation					
Existing recreation opportunities in the planning area would be maintained.	Limiting motorized travel to existing routes in PPMA, establishing seasonal road closures, and requiring changes to SRPs not neutral or beneficial to GRSG habitat would result in the loss of or changes to certain types of recreation in portions of the decision area.	Impacts are the same as those described under Alternative A.	Seasonal limitations on SRPs would limit recreation opportunities in GRSG habitat during certain times of the year.	Limitations on SRPs would result in impacts similar to those described under Alternatives B, D, and F. Springtime motorized travel restrictions would have a limited impact on recreation. This is because hunting, which typically occurs in the fall, would be unaffected.	Impacts are similar to those described under Alternative B.
Travel Management					
Travel management would continue, according to existing planning documents.	Limiting motorized travel to existing routes in PPMA would decrease cross-country travel opportunities and would limit access to certain routes.	Alternative C would close the most acres to cross-country motorized travel and limit motorized travel to existing routes instead. Because the existing route network is well dispersed throughout the decision area, this is not expected to noticeably	Same as Alternative B.	Cross-country motorized travel would be restricted, though not as much as under Alternative C. In addition, restricting motorized travel within 2 miles of leks during breeding season would temporarily limit access to routes in those areas, which could	Same as Alternative B, with the addition that limitations on road improvements could decrease access for certain vehicle types, such as passenger vehicles.

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		increase congestion or conflict over the long term.		increase motorized travel in other areas.	
Lands and Realty					
<p>ROW avoidance and exclusion restrictions would not prevent the BLM from accommodating future demand for ROW development within the planning area.</p> <p>Approximately 5% of GRSG habitat would be managed as ROW exclusion and 30% as ROW avoidance.</p> <p>Because most lands in the planning area would be available for ROW development, the BLM lands and realty program would be able to accommodate most new ROW development. Little to no impacts on lands and realty would occur under Alternative A.</p> <p>Existing transportation routes would continue</p>	<p>Managing PGMA as ROW exclusion would prevent the BLM from accommodating new ROW development in those areas. With a continuing demand for new ROWs in the planning area, including major interstate and intrastate electrical transmission and gas pipelines, ROW developments would be diverted to adjacent nonfederal lands or would be prevented altogether.</p> <p>Within exclusion areas, the BLM would consider new ROW authorizations only where the proposed</p>	<p>The BLM would not authorize new ROW development in GRSG habitat; therefore, Alternative C would eliminate opportunities for new ROW development, including wind and solar generation facilities, communication towers, gas pipelines, fiber optic cables, electrical transmission lines, and similar. There is a continuing demand for these ROWs in the planning area to meet energy and communication needs elsewhere; Alternative C would prevent the BLM lands and realty program from meeting those needs.</p> <p>Designating all GRSG habitat as exclusion for</p>	<p>Managing PPMA as ROW avoidance areas with a 3% habitat disturbance cap would restrict the BLM from authorizing new ROW development in those areas without applying special stipulations for avoidance designation. Examples are siting criteria and design requirements. With a continuing demand for new ROWs in the planning area, including major interstate and intrastate electrical transmission and gas pipelines, ROW development could be discouraged in PPMA. If new ROW development could not be feasibly developed, the result would be reduced energy and communication</p>	<p>Stipulations for ROW avoidance areas under Alternative E would limit the BLM's ability to accommodate the demand for new infrastructure in GRSG habitat. Demand for new ROWs in the planning area, including major interstate and intrastate electrical transmission and gas pipeline ROW developments, are expected to continue and increase over time. Because of this, new ROW development would be diverted to adjacent nonfederal lands or would not occur at all. If new ROW development could not be feasibly developed, the result would be reduced energy and</p>	<p>Stipulations associated with ROW avoidance areas under Alternative F, similar to Alternative C, would limit the BLM's ability to accommodate the demand for new infrastructure development in GRSG habitat. Designation of all GRSG habitat as exclusion for wind energy ROWs plus the exclusion of new wind energy development within 5 miles of active leks would eliminate the BLM's ability to accommodate new wind energy development in the planning area. Restrictions on wind</p>

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to provide motorized access to ROW infrastructure and communication sites for construction and maintenance, with no additional impacts on lands and realty from travel and transportation management.	infrastructure, including construction and staging during construction, could be collocated entirely in an existing ROW. A 3% maximum surface disturbance cap would apply. The BLM would avoid new ROW PGMAs. Impacts on the lands and realty program under Alternative B include the need to locate proposed facilities outside exclusion areas or within existing ROWs. This limits the BLM's ability to accommodate the demand for new infrastructure development, including wind energy development. Prohibitions on new mineral development would decrease the	wind energy ROWs would eliminate the BLM's ability to accommodate new wind energy development in the planning area. It would hinder the BLM's ability to meet President Obama's renewable energy goal of 10 gigawatts of new renewable energy permitted on DOI lands by 2020. With demand for new ROWs, including wind energy developments, expected to continue and increase, new ROW development would be diverted to adjacent nonfederal lands, or it would not occur at all.	opportunities to meet growing demand. Impacts from travel management are the same as those described under Alternative B.	communication opportunities to meet growing demand. Impacts from travel management are the same as those described under Alternative B.	energy are greater under Alternative F than any other alternative, hindering the BLM's ability to meet President Obama's renewable energy goal of 10 gigawatts of new renewable energy permitted on DOI lands by 2020. Demand for new ROWs, including wind energy developments, are expected to continue and increase over time. Because of this, new ROW development would be diverted to adjacent nonfederal lands or would not occur. If new ROW development could not be feasibly developed, the result would be reduced energy and communication

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	<p>number of ROW applications received by the BLM for roads, distribution lines, and related infrastructure necessary to support mineral activity.</p> <p>Limiting new road construction and incorporating supplemental mitigation requirements could make certain areas impractical for new ROW development.</p>				<p>opportunities to meet growing demand.</p> <p>Impacts from travel management are the same as those described under Alternative B, except there would be, at a minimum, seasonal closures within two miles of active leks.</p>
Fluid Leasable Minerals					
Under Alternative A, 8,314,700 acres (66%) of BLM-administered surface within the decision area would continue to be open to ROW location. However, the fluid minerals program could be indirectly impacted by the limits on the available means for transporting fluid	Approximately 6,762,920 acres (44% of the federal mineral estate), including all federal mineral estate within PPMAs, would be closed to fluid mineral leasing. Closing these acres would directly impact the fluid minerals program in	Approximately 10,895,300 acres (71% of the federal mineral estate), including all federal mineral estate within occupied habitat, would be closed to fluid mineral leasing. Closing these acres would directly impact the fluid minerals program in the manner described under Alternative A; however,	Approximately 3,604,400 acres (24% of the federal mineral estate) would be closed to fluid mineral leasing. Impacts would increase compared with Alternative A because 15% more acres would be closed to leasing under Alternative D. All BLM-administered	Approximately 6,762,920 acres (44% of the federal mineral estate), including all federal mineral estate within Core Area habitat would be closed to fluid mineral leasing. Impacts are the same as those under Alternative B. Management of all federal mineral estate in the decision area	Management of fluid minerals would be similar to that under Alternative C; however, geophysical exploration would be allowed within occupied habitat for the purpose of gathering information about fluid mineral

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<p>minerals to processing facilities and markets in areas managed as ROW exclusion or avoidance. Transmission of geothermal-produced electricity to the power grid could also be impacted. This would apply wherever there is overlap between federal fluid mineral leases and the 4,303,300 acres (34%) of BLM-administered surface in the decision area that would continue to be managed as ROW avoidance or exclusion.</p> <p>Under Alternative A, 3,134,200 acres (21%) of federal mineral estate in the decision area would remain closed to fluid mineral leasing. Acres closed have the greatest impact on the fluid minerals program by prohibiting the development of fluid minerals on portions of federal mineral estate.</p>	<p>the manner described under Alternative A. However, because twice as many acres would be closed under Alternative B as under Alternative A, the magnitude of these impacts would also increase.</p> <p>Because all PPMAs would be closed to fluid mineral leasing under Alternative B, managing areas as ROW exclusion in PPMAs would have no impact on fluid minerals.</p> <p>Under Alternative B, conservation measures in addition to RDFs would be applied as COAs to the 10 existing federal leases in PPMAs. These RDFs and conservation measures would include requirements</p>	<p>because three times as many acres would be closed under Alternative C as under Alternative A, the magnitude of these impacts would also increase.</p> <p>Because all occupied habitat would be closed to fluid mineral leasing under Alternative C, managing occupied habitat as ROW exclusion would have no impact on fluid minerals.</p> <p>Conservation measures and RDFs would be applied as COAs to the 50 existing leases within occupied habitat. Applying these requirements through COAs would impact fluid mineral operations by restricting fluid mineral development. To avoid these restrictions, operators may relocate to nearby</p>	<p>surface within PPMAs not already managed as ROW exclusion would be managed as ROW avoidance. As a result, 5,964,800 acres (47%) of BLM-administered surface in the decision area would be managed as ROW avoidance, and 857,600 acres (7%) would be managed as ROW exclusion. Fluid mineral leases beneath BLM-administered surface in PPMAs would be indirectly impacted in the manner described under Alternative A. However, because 73% more acres would be managed as ROW avoidance under Alternative D, the magnitude of impacts would increase.</p> <p>The BLM would apply a buffer system to manage fluid mineral development in and next to occupied</p>	<p>outside Core Area habitat would be the same as that under Alternative A, with the same impacts. Because all Core Area habitat would be closed to fluid mineral leasing under Alternative E, managing Core Area habitat as ROW exclusion would have no impact on fluid minerals.</p> <p>Impacts of fluid mineral management on existing fluid mineral leases are the same as those under Alternative A.</p>	<p>resources outside occupied habitat. Impacts of closures are the same as those under Alternative C. Impacts of the restrictions on geophysical exploration are the same as those described under Alternative B; however, because the restrictions would apply to more acres under Alternative F, the impacts would be greater.</p> <p>Because all occupied habitat would be closed to fluid mineral leasing under Alternative F, managing occupied habitat as ROW exclusion would have no impact on fluid minerals.</p>

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<p>Operators may relocate to nearby states or to private lands.</p> <p>The 50 existing leases within occupied habitat would continue to be subject to any stipulations and BMPs contained in their leases.</p>	<p>such as surface disturbance limitations, TLs, noise restrictions, structure height limitations, design requirements, water development standards, remote monitoring requirements, and reclamation standards.</p>	<p>states or to private lands, resulting in less development of federal fluid mineral resources.</p>	<p>habitat. Under this system, leks would be surrounded by buffers of varying sizes, in which NSO stipulations would apply. In addition, CSU and TL stipulations would apply to all areas within occupied habitat that are outside a lek buffer. Application of these surface disturbance restrictions, TLs, and other operating standards would limit the siting, design, and operations of fluid mineral development projects.</p>		
Locatable Minerals					
<p>Under Alternative A, 996,800 acres (7%) of federal mineral estate would remain withdrawn, and an additional 20,500 acres (less than 1%) would continue to be recommended for withdrawal.</p>	<p>Under Alternative B, 4,490,500 acres (29%) of federal mineral estate in the decision area (including all PPMAs) would be recommended for withdrawal, compared with</p>	<p>Under Alternative C, 9,653,400 acres (63%) of federal mineral estate in the decision area (including all occupied habitat) would be recommended for withdrawal, compared with 20,500 acres under Alternative A. The large</p>	<p>Locatable mineral management under Alternative D would be similar to that under Alternative A. The exception is that new and existing claims, operations, and notices in PPMAs would be requested to</p>	<p>Similar to Alternative B, 4,490,500 acres of federal mineral estate (including all Core Area habitat) would be recommended for withdrawal from locatable mineral entry. This would impact locatable minerals, as</p>	<p>Locatable mineral management would be the same as that under Alternative B, with the same impacts.</p>

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<p>Approximately 14,239,700 acres (93%) of federal mineral estate in the decision area would remain open to locatable mineral entry. Withdrawal or closure of an area to mining development eliminates the ability to access and extract the mineral resources in that area under new claims. This represents an impact on the potential discovery, development, and use of those resources by decreasing the availability of mineral resources. In addition, validity exams must be completed on all existing claims, notices, and plans of operations in withdrawn areas. The need for these exams adds burdens for the BLM and delays extraction of the resources.</p> <p>This alternative would be the least restrictive</p>	<p>20,500 acres under Alternative A. A 3% surface disturbance cap would apply to PPMA. The large increase in areas recommended for withdrawal under this alternative, compared with Alternative A, would increase the development delays of existing claims and burdens of validity exams on the BLM and claimant described under Alternative A. Additional BMPs could be recommended to existing claims, notice-level activities, and operations within PPMA's if the operator were willing to apply them. This would affect mining operations and practices.</p>	<p>increase in areas recommended for withdrawal under this alternative, compared with Alternative A, would increase the development delays of existing claims and burdens of validity exams on the BLM and claimant described under Alternative A. This would be the most restrictive alternative.</p>	<p>change mining operations and practices to limit surface disturbance of 3% of PPMA's and to mitigate impacts on GRS's. Because these actions would not be mandatory, operators' ability to access and extract locatable minerals on federal mineral estate would not be impacted.</p>	<p>described under Alternative B.</p>	

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to locatable minerals because a larger percentage of the decision area would be open to locatable mineral entry, and mine operators would not change their practices.					
Mineral Materials					
Under Alternative A, 8,314,700 acres (66%) of BLM-administered surface within the decision area would continue to be open to ROW location. However, demand for mineral materials would remain low on the 4,303,300 acres (34%) of BLM-administered surface in the decision area that would continue to be managed as ROW avoidance or exclusion. Approximately 2,752,500 acres (18%) of federal mineral estate within the decision area would remain closed to	Because all PPMAs would be closed to mineral materials disposal under Alternative B, managing areas as ROW exclusion in PPMAs would have no impact on mineral materials. Approximately 7,105,500 acres of federal mineral estate in PPMAs (47% of the federal mineral estate decision area) would be closed to mineral material disposal. The types of impacts from these closures would be the same	All 10,682,100 acres of BLM-administered surface in occupied habitat would be managed as ROW exclusion under Alternative C. This management would not impact mineral materials because all occupied habitat would be closed to mineral materials disposal. Under Alternative C, approximately 11,511,900 acres (75%) of federal mineral estate in the decision area (including all occupied habitat) would be closed to mineral material disposal. Impacts of	Because all PPMAs would be closed to mineral materials disposal under Alternative D, managing areas as ROW avoidance in PPMAs would have no impact on mineral materials. Management of mineral materials under Alternative D would be the same as that under Alternative B.	Because all Core Area habitat would be closed to mineral materials disposal under Alternative E, managing Core Area habitat as ROW exclusion would have no impact on mineral materials. Under Alternative E, all federal mineral estate in Core Area habitat would be closed to mineral materials disposal. The acres affected and the impacts of this management are the same as that under Alternative B.	Under Alternative F, all occupied habitat would be managed as ROW exclusion areas. PPMAs would be closed to mineral materials disposal; because of this, mineral materials in PPMAs would not be impacted by ROW exclusion areas. PGMAs would be impacted by these areas in the manner described under Alternative A. Within PGMAs, 12 times more acres would be managed as ROW avoidance under Alternative F compared to

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mineral material disposal. Closing these areas to mineral material disposal would result in pits being relocated nearby, if feasible, to meet demand for road maintenance and other needs. If demand for mineral materials could not be met by pits operated on federal lands, pits could be moved onto private or state lands with mineral material resources. If no mineral materials were to occur near closed areas, developers would have to transport them to construction sites from farther away. This would alter the location of mineral materials development.	as those discussed under Alternative A; however, because three times more acres of federal mineral estate would be closed under Alternative B, the magnitude of these impacts would increase.	these closures are the same as those described under Alternative A; however, because four times more acres would be closed to mineral material disposal under Alternative C, the magnitude of those impacts would increase.			Alternative A. Management of mineral materials under Alternative F would be the same as that under Alternative B.
Nonenergy Leasable Minerals					
Under Alternative A, 8,314,700 acres (66%) of BLM-administered surface within the decision area would	Because all PPMA's would be closed to nonenergy solid mineral leasing under Alternative B,	All 10,682,100 acres of BLM-administered surface in occupied habitat would be managed as ROW	All BLM-administered surface within PPMA's not already managed as ROW exclusion would be managed as ROW	Because all Core Area habitat would be closed to nonenergy solid mineral leasing under Alternative E, managing	Under Alternative F, all occupied habitat would be managed as ROW exclusion areas. PPMA's would

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
<p>continue to be open to ROW location. However, the nonenergy leasable minerals program could be indirectly impacted by the limits on the available means for transporting minerals to processing facilities and markets in areas managed as ROW exclusion or avoidance. This would apply wherever there is overlap between federal nonenergy solid mineral leases and the 4,303,300 acres (34%) of BLM-administered surface in the decision area that would continue to be managed as ROW avoidance or exclusion.</p> <p>Under Alternative A, 12,122,900 acres (79%) of federal mineral estate in the decision area would remain open to nonenergy solid mineral prospecting and leasing, and 3,134,200 acres</p>	<p>managing areas as ROW exclusion in PPMA's would have no impact on nonenergy solid leasable minerals.</p> <p>The BLM would close all PPMA's to nonenergy solid mineral leasing under Alternative B. This would result in 7,157,800 acres (47%) of federal mineral estate in the decision area being closed to prospecting and leasing. Alternative B would close twice the acreage as Alternative A. This would increase the intensity of the impacts described under Alternative A.</p>	<p>exclusion under Alternative C. This management would not impact nonenergy solid leasable minerals because all occupied habitat would be closed to nonenergy solid mineral leasing.</p> <p>The BLM would close all occupied habitat to nonenergy solid mineral leasing under Alternative C. This would result in 11,085,800 acres (73%) of federal mineral estate in the decision area being closed to prospecting and leasing. Alternative C would close four times the acreage, compared to Alternative A. This would increase the intensity of the impacts described under Alternative A.</p>	<p>avoidance. As a result, 5,964,800 acres (47%) of BLM-administered surface in the decision area would be managed as ROW avoidance, and 857,600 acres (7%) would be managed as ROW exclusion. Nonenergy solid mineral leases beneath BLM-administered surface in PPMA's would be indirectly impacted in the manner described under Alternative A. However, because 73% more acres would be managed as ROW avoidance under Alternative D, the magnitude of impacts would increase. ROWs in PGMA would be subject to site-specific restrictions to protect GRSG, which would add restrictions to nonenergy leasable mineral operations in PGMA compared with</p>	<p>Core Area habitat as ROW exclusion would have no impact on nonenergy solid leasable minerals.</p> <p>Management of nonenergy leasable minerals under Alternative E would be the same as that under Alternative B and with the same impacts.</p>	<p>be closed to nonenergy solid mineral leasing. Because of this, nonenergy solid leasable minerals in PPMA's would not be impacted by ROW exclusion areas. PGMA's would be impacted by these areas in the manner described under Alternative A. Within PGMA's, 12 times more acres would be managed as ROW avoidance under Alternative F compared to Alternative A.</p> <p>Management of nonenergy leasable minerals under Alternative F would be the same as that under Alternative B and with the same impacts.</p>

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
(21%) would remain closed to prospecting and leasing. Closing an area to nonenergy solid mineral leasing directly impacts nonenergy leasable minerals by removing the possibility of mineral resources in that area from being accessed and extracted.			<p>Alternative A.</p> <p>Under Alternative D, the BLM would apply NSO stipulations to 4,756,900 acres (31%) of the federal mineral estate decision area, including all acres within PPMAs. Applying NSO stipulations would restrict the ability of nonenergy leasable mineral resources to be developed or extracted. To avoid these restrictions, operators may relocate to nearby states or to private or state lands, which would reduce nonenergy leasable mineral development on federal mineral estate.</p>		
Special Designations					
Under all alternatives, there would be no or negligible effects on Wilderness Areas,	Under all alternatives, there would be no or negligible effects on	Under all alternatives, there would be no or negligible effects on Wilderness Areas,	Under all alternatives, there would be no or negligible effects on Wilderness Areas,	Under all alternatives, there would be no or negligible effects on Wilderness Areas,	Under all alternatives, there would be no or negligible effects on

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
<p>WSAs, Cooperative Management and Protection Areas, National Historic Trails, and Wild and Scenic Rivers.</p> <p>Under Alternative A 200,400 acres of ACECs overlap PPH and 251,200 acres of ACECs overlap PGH. ACECs that overlap PPH and PGH are likely to experience additional protection from the restrictions placed on GRSG habitat.</p> <p>Under Alternatives A and D, fewer acres (545,300) of PPH and PGH are managed as ROW exclusion areas than under the other alternatives. This would likely result in fewer indirect protections for ACECs.</p> <p>More acres (9,994,300) are open to livestock grazing under Alternatives A and B</p>	<p>Wilderness Areas, WSAs, Cooperative Management and Protection Areas, National Historic Trails, and Wild and Scenic Rivers.</p> <p>Under Alternative B the same number of acres of ACECs would overlap PPMA and PGMA as would under Alternative A.</p> <p>Under Alternative B 4,547,000 acres of PPMA and PPGA would be managed as ROW exclusion areas. This is 4,001,700 more acres than under Alternative A. It would result in more indirect protections from the impacts of ROW development than under Alternative A.</p> <p>More acres (9,994,300) are open to livestock grazing</p>	<p>WSAs, Cooperative Management and Protection Areas, National Historic Trails, and Wild and Scenic Rivers.</p> <p>Under Alternative C the same number of acres of existing ACECs would overlap PPMA and PGMA as would under Alternative A. However, under Alternative C an additional 5,063,388 acres of PPMA (all PPMA) would be designated as ACECs for GRSG conservation. No additional acres of PGMA would be designated as ACECs.</p> <p>The most acres (10,216,500) of PPMA and PPGA are managed as ROW exclusion area under Alternatives C and F. This would result in more incidental protections to ACECs that contain GRSG</p>	<p>WSAs, Cooperative Management and Protection Areas, National Historic Trails, and Wild and Scenic Rivers.</p> <p>Under Alternative D the same number of acres of ACECs would overlap PPMA and PGMA as would under Alternative A.</p> <p>In ACECs and RNAs containing 20% PPMA or 50% PGMA, ACECs would be managed for GRSG conservation in addition to existing values. Management would change to provide additional protections to the GRSG. This would likely provide additional protection to the values of the ACECs. Additionally there would be more restrictive management for RNAs under this alternative.</p>	<p>WSAs, Cooperative Management and Protection Areas, National Historic Trails, and Wild and Scenic Rivers.</p> <p>Under Alternative E the same number of acres of ACECs would overlap Low Density habitat and Core Area habitat as would under Alternative A.</p> <p>Under Alternative E 4,703,600 acres of low-density habitat and Core Area habitat are managed as ROW exclusion. This would result in more indirect protection from the impacts of ROW development than under Alternative A.</p> <p>Under Alternative E 8,316,700 acres of low-density habitat and Core Area habitat are open to livestock grazing. This is 1,677,600 fewer acres</p>	<p>Wilderness Areas, WSAs, Cooperative Management and Protection Areas, National Historic Trails, and Wild and Scenic Rivers.</p> <p>Under Alternative F the same number of acres of ACECs would overlap PPMA and PGMA as would under Alternative A.</p> <p>An additional 2,760,783 acres of PPMA and 1,492,804 acres of PGMA would be designated as ACECs.</p> <p>The most acres (10,216,500) of PPMA and PPGA would be designated as ROW exclusion areas under Alternatives C and F. Impacts under Alternative F from this are the same as</p>

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
than under any of the other alternatives. Therefore, ACECs under Alternatives A and B would experience fewer incidental protections that result from closing acres to livestock grazing than would ACECs under the other alternatives.	under Alternatives B and A than under the other alternatives. Impacts on ACECs are the same as those described under Alternative A.	habitat than under the other alternatives. Under Alternative C the smallest number of acres (0) of PPMA and PGMA are open to livestock grazing. This would protect ACECs that overlap PPMA and PGMA from livestock grazing impacts.	The fewest acres (545,300) of PPMA and PGMA are managed as ROW exclusion areas under Alternatives A and D. Impacts are the same as under Alternative A. Under Alternative D 9,931,400 acres of PPMA and PGMA would be open to livestock grazing.	than under Alternative A and would result in fewer impacts from livestock grazing on ACECs than under Alternative A.	those under Alternative C. Under Alternative F 7,495,700 acres of PPMA and PGMA would be open to livestock grazing. This is 2,498,600 fewer acres than under Alternative A. It would result in fewer impacts from livestock grazing on ACECs than under Alternative A.
Soil Resources					
Alternative A would be the least protective of soils due to allowing the most opportunities and areas for surface disturbances capable of degrading soil resources.	Alternative B would be more protective of soil resources than Alternatives A and D and less protective than Alternatives C and F. While Alternatives B and E are similar in their amount of closures to mineral resources, Alternative B has more closures to livestock grazing,	Alternative C would provide for the most protection of soil resources due to having the most acres closed to livestock grazing, the most acres managed as limited to existing routes under travel management, the most acres closed under each type of mineral development, and the most ROW exclusion areas under lands and	Alternative D would be more protective of soil resources than Alternatives A and E from potential impacts from livestock grazing and travel management due to more closures. However, it would be less protective of soil resources from ROW authorizations and associated development and from energy and mineral	The effects on soil resources from livestock grazing under Alternative E are similar to those under Alternatives A and D. Alternative E would manage more acres as restricted to existing roads and trails for cross-country travel as Alternative A but fewer than Alternatives B, C, D, and E.	Alternative F would be less restrictive of surface-disturbing activities than Alternative C, but it would be more restrictive than Alternatives A, B, D, and E.

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
	more ROW exclusion areas, and more acres restricted to existing roads and trails than Alternative E. This makes Alternative B more protective of soil resources than Alternative E.	realty.	development than under Alternatives B, C, D, and E.		
Water Resources					
Alternative A would be the least protective of water resources because it would allow the most opportunities and areas for surface disturbances capable of degrading water resources.	Alternative B would be more protective of water resources than Alternatives A and D and less protective than Alternatives C and F. While Alternatives B and E are similar in their number of closures to mineral resources, Alternative B has more closures to livestock grazing, more ROW exclusion areas, and more acres restricted to existing roads and trails than Alternative E. This	Alternative C would provide for the most protection of water resources because it has the most acres closed to livestock grazing, the most acres managed as limited to existing routes under travel management, the most acres closed under each type of mineral development, and the most ROW exclusion areas under lands and realty.	Alternative D would be more protective of water resources than Alternatives A and E from potential impacts of livestock grazing and travel management due to larger amounts of closure to these activities. However, it would be less protective of water resources from ROW authorizations and associated development and energy and mineral development than under Alternatives B, C, D, and E.	Alternative E would be less protective of water resources from the potential effects of livestock grazing than Alternatives B, C, and F. It calls for the same number of closures as Alternatives A and D. The effects on water resources from livestock grazing under Alternative E are similar to those under Alternatives A and D. Alternative E would restrict more acres to existing roads and trails for cross-country travel as Alternative A but fewer acres than	Alternative F would be less restrictive of surface-disturbing activities than Alternative C, but it would be more restrictive than Alternatives A, B, D, and E.

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
	makes Alternative B more protective of water resources than Alternative E.			Alternatives B, C, D, and F. Energy and mineral development under Alternative E would be managed the same as under Alternative B. As a result, the potential effects on water resources would be reduced, compared to Alternative A, but to a lesser extent than under the other action alternatives.	
Lands with Wilderness Characteristics					
Second-fewest incidental protections of lands with wilderness characteristics due to fewest restrictions on surface-disturbing activities.	Similar to Alternative A.	Most incidental protections of lands with wilderness characteristics due to most restrictions on surface-disturbing activities.	Similar to Alternative A for livestock grazing; more incidental protections of lands with wilderness characteristics than Alternative A for ROWs.	Fewest incidental protections of lands with wilderness characteristics due to fewest restrictions on surface-disturbing activities.	Second-most incidental protections of lands with wilderness characteristics due to second-most restrictions on surface-disturbing activities.
Social and Economic Conditions (Including Environmental Justice)					
Economic					
Most AUMs available for livestock grazing under Alternative A, with the least costs	Relative to Alternative A, Alternative B has added costs to	Under Alternative C, there would be an annual loss of an estimated \$67.5 million	Alternative D would result in an annual loss of up to \$0.8 million in grazing-related output,	Same as Alternative B .	Alternative F would result in an annual loss of between \$33.8 million and

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
related to infrastructure improvements and vegetation treatments.	livestock farmers imposed by restrictions on infrastructure improvement and vegetation treatments.	in grazing-related output, \$23.5 million in grazing-related labor earnings, and 746 grazing-related jobs in the primary study area, relative to Alternative A.	\$0.3 million in grazing-related earnings, and up to 9 grazing-related jobs in the primary study area.		\$42.4 million in grazing-related output, between \$11.8 million and \$14.7 million in grazing-related earnings, and between 373 and 466 grazing-related jobs in the primary study area.
Alternative A would have the fewest costs to recreationists on BLM lands.	Under Alternative B limiting SRPs and restricting motorized travel could lead to some added costs to recreationists.	Same as Alternative A.	Same as Alternative B.	Same as Alternatives B and D.	Same as Alternatives B, D, and E.
The greatest share of federal mineral estate would be open for development of locatable and salable minerals under Alternative A.	Under Alternative B there would be increased costs to future locatable mineral investments and potential reduction in local supply and demand for salable minerals.	Same as Alternative A.	Same as Alternative B.	Same as Alternatives B and D.	Same as Alternatives B, D, and E.
Alternative A would have the fewest restrictions to geothermal energy	Under Alternative B there could be restrictions on geothermal energy	Alternative C has the most potential restrictions on geothermal energy	Same as Alternative A.	Same as Alternative B.	Same as Alternative C.

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
development.	development.	development.			
Alternative A would have the fewest restrictions on wind energy development.	Under Alternative B an estimated 60 annual jobs would be lost. There could be additional impacts on future investments and increased access and mitigation costs.	Alternative C would have the greatest loss of potential future wind energy development.	Under Alternative D, there would be increased costs to wind energy investors, compared to Alternative A. These costs would apply to routing transmission lines, access roads, and mitigation.	Same as Alternative D.	Same as Alternative C.
Alternative A would have the fewest costs to future infrastructure investments.	Costs to future infrastructure investments would increase under Alternative B.	Alternative C would have the greatest costs to future infrastructure investments.	Under Alternative D, there would be slightly increased costs to future infrastructure investments, compared to A.	Same as Alternative A.	Same as Alternative B.
Alternative A would have the fewest long-term restrictions on future output, employment, and earnings.	Under Alternative B long-term restrictions on future output, employment, and earnings would increase, when compared to Alternative A. There would be fewer restrictions than Alternative C.	Alternative C would have the greatest long-term restrictions on output, employment, and earnings.	Long-term restrictions on future output, employment, and earnings would increase, when compared to Alternative A, but would be less than Alternatives B or C	Same as Alternative D.	Alternative F would have the second most long-term restrictions on future output, employment, and earnings, after Alternative C.

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Alternative A would have the no impacts on state or local fiscal revenues.	Same as Alternative A.	There would be adverse impacts on local fiscal revenues of grazing related communities in Malheur, Harney, and Lake Counties under Alternative C.	Adverse impacts on local fiscal revenues of grazing related communities in Malheur, Harney, and Lake Counties, when compared to Alternative A, but less than Alternatives C or F.	Same as Alternative A.	There would be adverse impacts on local fiscal revenues of grazing related communities in Malheur, Harney, and Lake Counties, but to a lesser extent than under Alternative C.
Social					
Current population trends would be unaffected	Same as Alternative A.	Alternative C has the potential for adverse impacts on population growth in communities associated with grazing, particularly in Lake, Malheur, and Harney Counties.	Same as Alternative A.	Same as Alternative A.	Potential for adverse impacts on population growth in communities associated with grazing, particularly in Lake, Malheur, and Harney Counties, although to a lesser extent than under Alternative C.
No impact on housing and public services	Same as Alternative A.	Abilities of counties to supply public services could be reduced under Alternative C.	Same as Alternative A.	Same as Alternative A.	Abilities of counties to supply public services could be reduced, although to a lesser extent than under Alternative C.
Current multiple-use balance of BLM-	Adverse impacts on motorized	Alternative C would have adverse impacts on	There would be adverse impacts on	There would be adverse impacts on motorized	There would be adverse impacts on

Table 2-7
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
administered lands maintained	recreation and mining interests and infrastructure development interest; beneficial impacts on conservation interests	communities with interests in grazing, on geothermal development interests, and on infrastructure development interest; it would have beneficial impacts on conservation interests.	motorized recreation, mining, and infrastructure development interests under Alternative D. However, there would be beneficial impacts on conservation interests.	recreation and mining interests under Alternative E. However, there would be beneficial impacts on conservation interests.	grazing, motorized recreation, mining, geothermal, and infrastructure development interests under Alternative F. However, there would be beneficial impacts on conservation interests.
Environmental Justice					
No disproportionately high and adverse impacts on minority or low-income populations	No disproportionately high and adverse impacts on minority or low-income populations	Socioeconomic impacts of adverse effects on grazing in Malheur, Lake, and Harney Counties would be high and adverse and disproportionately impact low-income populations	No disproportionately high and adverse impacts on minority or low-income populations	No disproportionately high and adverse impacts on minority or low-income populations	Socioeconomic impacts of adverse effects on grazing in Malheur, Lake, and Harney Counties would be high and adverse and disproportionately impact low-income populations

2.11 COMPARISON OF ALTERNATIVES ALLEVIATION OF USFWS-IDENTIFIED THREATS

Approaches to GRSG management and alleviation of the USFWS-identified threats to GRSG vary by alternative. **Table 2-8**, Comparison of Alleviated Threats to Greater Sage-Grouse by Alternative, summarizes and cross references specific management by the applicable BLM resource programs under each alternative with the threat.

Table 2-8
Comparison of Alleviated Threats to Greater Sage-Grouse by Alternative

Resource/Resource Use	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
COT Report Threat – Fire						
<i>Fire and Fuels</i>						
Fire and fuels management	Current management allows fuels treatments in sagebrush and promotes developing fuel breaks.	In PPMA, implement fuels treatments that protect sagebrush, maintaining canopy cover and restricting fuels treatments.	Same as Alternative A	Develop fuel breaks to protect larger intact blocks of habitat. Treat 3% of GRSG habitat per year for 10 years to reduce the probability of homogeneous burn patterns.	Prevent fire from entering at-risk communities (e.g., cheatgrass)	Same as Alternative B
<i>Wildfire</i>						
Fire operations	No similar action.	In PPMA, prioritize suppression in GRSG habitat immediately after life and property.	Same as Alternative A.	Same as Alternative B.	Give wildfire suppression priority to known GRSG habitat within the framework of the Federal Wildland Fire Policy	Same as Alternative B.
Summary of Impacts on GRSG from Fire	For fire suppression, Alternatives B, C, and F would produce homogeneous fuel beds that could result in invasive plant issues post-burn. Alternative D is most likely to reduce fire risks since the widest range of techniques is allowed and the use of unplanned fire to meet habitat objectives is explicitly permitted. Alternative E is more likely to be effective than Alternatives B, C, or F because it allows for treating sagebrush to create mosaics, but its approach is more limited than Alternative D. Alternative A is similar to Alternative D in probable outcomes but the lack of clear					

Table 2-8
Comparison of Alleviated Threats to Greater Sage-Grouse by Alternative

Resource/Resource Use	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
	desired conditions under A allows for disparate interpretations to guide use of fire and fuels management for sagebrush-steppe restoration.					
COT Report Threat – Energy Development and Mining						
Unleased Fluid Minerals						
Areas closed to fluid mineral leasing (federal)	3,134,159	6,530,944	10,615,593	Same as Alt A	Same as Alt B	Same as Alt C
Areas open to mineral leasing with NSO stipulation	905,983	600,745	194,813	3,462,624	Same as Alt B	Same as Alt C
Open to fluid mineral leasing, total acres (federal)	9,483,868	6,087,084	2,002,435	Same as Alt A	Same as Alt B	Same as Alt C
Mining						
Locatable minerals – recommended for withdrawal	20,453	4,292,266	9,392,412	Same as Alt A	Same as Alt B unless non-habitat	Same as Alt B
Open for consideration for mineral materials disposal/salable minerals	9,483,868	6,087,084	2,002,435	Same as Alt A	Same as Alt B	Same as Alt B
Summary of Impacts on GRSG from Energy Development and Mining	For leasable and salable minerals, Alternatives B, C, and F would close all PPMA to new mineral leases, or Alternative E within Core Area habitat. Leasing in GRSG habitat would not be avoided under Alternative A. While Alternative D also would not avoid leasing in GRSG habitat, new leases would be subject to NSO or CSU stipulations and a 3% maximum disturbance cap in PPMA. (Alternatives B and F also include a 3% disturbance cap, while Alternative C includes a 0% disturbance cap in PPMA.) While stipulations would be available to the BLM in Alternatives B, C, D, and F, they could be imposed with leased fluid minerals only to the extent allowed by law. Thus, the alternatives that close GRSG to new leases (Alts. B, C, and F) provide a greater degree of habitat protection. For locatable minerals, Alternatives C and F would recommend to withdraw the largest amount of					

Table 2-8
Comparison of Alleviated Threats to Greater Sage-Grouse by Alternative

Resource/Resource Use	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
	GRSG habitat from locatable minerals. Alternative B would withdraw only PPMA, 95% of known occupied habitat in Oregon. Alternative E would not propose to withdraw habitat. Alternatives A and D do not propose to withdraw habitat from mineral entry. All of the action alternatives, except Alternative E, have the same RDFs and BMPs. Overall, Alternatives A and D are the least effective in avoiding new mining activities or associated facilities within occupied habitat, because they rely primarily on discretionary actions. Alternatives C and F would be the most effective at protecting GRSG habitat from mining activities.					
COT Report Threat – Infrastructure						
ROW avoidance areas	3,445,685	6,106,923	292,671	5,964,814	Same as Alt A	Same as Alt C
ROW exclusion areas	857,564	4,866,030	10,682,124	Same as Alt A	Same as Alt A	Same as Alt C
Summary of Impacts on GRSG from Infrastructure	Alternative A would allow development in existing corridors. Alternatives B, C, E, and F would establish ROW exclusion areas in PPMA and avoidance areas in PGMA. Alternative D would avoid ROWs in PPMA but would not establish exclusion areas. A 3% maximum disturbance cap would apply for Alternatives B, D, and F. Exclusion areas may be ineffective because existing infrastructure corridors have already been sited in areas of minimal impact, and exclusion could force ROWs onto private land where they could impact a larger amount of GRSG habitat.					
COT Report Threats – Grazing and Range Management						
Areas available for livestock grazing	12,121,617	Same as Alt A	0	11,982,637	Same as Alt A	7,495,716 (75% of Sum of PPH and PGH Open for Alt A)
Areas closed to grazing	345,888	Same as Alt A	11,686,805	484,025	Same as Alt A	2,498,572 (25% of Sum of PPH and PGH of Alt A)
Summary of Impacts on GRSG from Grazing	Alternatives B, D, and E would maintain existing acreage open to grazing but prioritize restoration of rangeland in GRSG habitat. Alternatives C and F would reduce or eliminate grazing in GRSG habitat areas, protecting GRSG from grazing impacts but also allowing for fuels buildup. Alternatives A, B, and F have lower probability of adjusting grazing management to meet sage-grouse habitat needs due to lack of specific management direction. Alternative C and F's					

Table 2-8
Comparison of Alleviated Threats to Greater Sage-Grouse by Alternative

Resource/Resource Use	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
	grazing restrictions could decrease sage-grouse habitat quality and quantity over the long term due to fuel buildup and the loss of weed control agreements. Alternative E is less likely to adjust grazing management to meet sage-grouse habitat needs, because assessments are not prioritized. Alternative D provides more specific direction with higher likelihood of adjusting grazing management to meet sage-grouse habitat needs.					
COT Report Threats – Conifer Invasion and Invasive Species (Vegetation Management)						
Areas prioritized for vegetation treatments	Maintain and improve condition of plant communities that provide wildlife habitat, recreation, forage, scientific, scenic, ecological, and water and soil conservation benefits	Prioritize restoration projects in areas most likely to benefit GRSG	Same as Alt A	Priority locations for restoration projects should be in the Restoration Opportunity Areas	Sagebrush conversion on BLM-administered lands (e.g., crested wheatgrass seedings) should be avoided	Same as Alt B
Summary of Impacts on GRSG from Vegetation Management	<p>Under existing management, BLM’s Integrated Vegetation Management Handbook (H-1740-2) includes best management practices for limiting the spread of invasive plant species during any ground-disturbing activity, which includes construction projects within or adjacent to sagebrush habitats. Most COT Report recommendations for invasive species do not require a land use plan decision to implement, and overall, it is unlikely that collective actions would have significant effect on invasive plant species spread rates. Thus, the alternatives may have little impact on vegetation management. Alternative C may be counterproductive, increasing the probability of invasive plant spread, because of its focus on passive management to restore sagebrush-steppe. Among the other alternatives, Alternative D has the most specific language, reducing potential for differing interpretations.</p> <p>For conifer encroachment, existing Standards for Rangeland Health promote the development of healthy rangeland ecosystems, and juniper encroachment into sagebrush-steppe is considered undesirable. Treatment of juniper encroachment generally has a high success rate. Alternatives A, B, D, and F are similar with respect to conifer encroachment, with the clearest treatment priorities under Alternative D. Alternative C, with its focus on passive restoration, would be ineffective. Alternative E places strict limits on the ability to treat juniper and thus would also be likely to result in failure to treat juniper at its rate of expansion.</p>					

Table 2-8
Comparison of Alleviated Threats to Greater Sage-Grouse by Alternative

Resource/Resource Use	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
COT Report Threat – Recreation						
Issuance of SRPs	No action	Only SRPs in PPMA that have neutral or beneficial impacts on GRSG	Same as Alternative A	Evaluate allowances for existing SRPs with stipulations in PPMA to reduce disturbance to GRSG	Protect GRSG from disturbance through seasonal closures of roads and areas	Same as Alternative B
Open to cross-country (off-road) motorized travel	6,811,890	4,141,539	1,202,694	Same as Alt B	3,913,675	Same as Alt B
Closed to off-road motorized travel	300,328	Same as Alt A	Same as Alt A	Same as Alt A	274,965	Same as Alt A
Acres limited – vehicle use only on existing roads and trails with possible time restrictions	5,325,377	7,996,165	10,937,171	Same as Alt B	6,043,851	Same as Alt B
Summary of Impacts on GRSG from Recreation	Most recreational activity in GRSG habitat is benign, with the exception of off-road vehicle use. Issuance of SRPs would be restricted under Alternatives B, D, and F, but dispersed recreational activity does not require a permit and would not be impacted. For road closures, Alternatives A, B, D, and F do not seasonally close roads in GRSG habitat, though they may limit use on a seasonal basis. Alternative C closes roads year-round in habitat areas, and restricts most other roads. Alternative E provides for seasonal closures during nesting season. Alternatives C and E are most protective of GRSG from recreational road impacts.					

Table 2-8
Comparison of Alleviated Threats to Greater Sage-Grouse by Alternative

Resource/Resource Use	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
COT Report Threat – Sagebrush Removal, Agricultural Conversion, and Urban Development						
Acres delineated as PPH/PPMA/Core	4,547,043	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A	Same as Alt A
Acres delineated as PGH/PGMA/Low Density	5,662,632	Same as Alt A	Same as Alt A	Same as Alt A	3,923,539	Same as Alt A
Acres not available for exchange or disposal (Zone I)	9,170,893	10,220,409	11,757,136	Same as Alt B	Same as Alt A	Same as Alt B
Areas of Critical Environmental Concern	715,048	Same as Alt A	5,063,388	Same as Alt A	Same as Alt A	4,755,249
Summary of Impacts on GRSG from Agriculture/Urbanization	<p>All action alternatives establish GRSG management areas in priority or core habitat and general or Low Density habitat. Alternative A does not specify retention of GRSG habitat, but retains land with wildlife habitat value. Alternative E retains Alternative A's approach. Alternatives B, C, D, and F would avoid disposal of PPH/Core GRSG habitat, but Alternative C would also retain PGMA, thereby protecting the largest amount of habitat from exchange or disposal. Alternatives C and F are the only alternatives to establish new ACECs for GRSG. In ACECs where GRSG is a relevant and important value, management prescriptions would be tailored to the threats to GRSG in each specific location and would be more likely to protect intact GRSG habitats or populations than alternatives lacking new ACECs.</p>					

2.13 CONSIDERATIONS FOR SELECTING A PREFERRED ALTERNATIVE

The proposed alternatives offer a range of discrete strategies for the following:

- Resolving deficiencies in existing management
- Exploring opportunities for enhanced management
- Addressing issues identified through internal assessment and public scoping related to maintaining or increasing GRSB abundance and distribution on BLM-administered lands

Comments submitted by other government agencies, public organizations, state and tribal entities, and interested individuals were given careful consideration. Public scoping efforts enabled the BLM to identify and shape important issues pertaining to GRSB habitat, energy development, livestock grazing, West Nile virus, potential ACECs, public land access, and other program areas. Cooperating agencies reviewed and provided comments at critical intervals during alternatives development.

NEPA regulations developed by the CEQ require the BLM to identify a preferred alternative in the draft RMPA/EIS. Formulated by the planning team, the preferred alternative represents those goals, objectives, and actions determined to be most effective at resolving planning issues and balancing resource use at this stage of the process. While collaboration is critical in developing and evaluating alternatives, the final designation of a preferred alternative remains the exclusive responsibility of the lead agency, which is the BLM for this project.

Alternative D is the BLM's Preferred Alternative. The BLM selected the preferred alternative based on meeting the purpose and need, the BLM's multiple use mission, interdisciplinary team recommendations, environmental consequences analysis of the alternative, and cooperating agency comments provided on the Administrative Draft EIS. Based on public, agency, and tribal comments on the Draft EIS, the BLM will make the final selection of the Proposed Alternative, which may include elements of other alternatives.